Hubert Käppel

THE BIBLE OF CLASSICAL GUITAR TECHNIQUE

A detailed compendium of the fundamentals and playing techniques of 21st century classical guitar including comprehensive, progressively structured exercises throughout

THE BIBLE OF CLASSICAL GUITAR TECHNIQUE

AMA VERLAG

Imprint

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AMA Verlag GmbH
Postfach 1168
50301 Brühl
Germany

Email: mail@ama-verlag.de
http://www.ama-verlag.de
Cover, Guitar: Albert & Müller 2008
Jacket Illustration and Design: akino, au gratin graphics
Book Layout: Edgar Kroll
Notation: Jörg Falk
Photos: Jörg Falk and Hans-Werner Huppertz
English Translation: Jon Welch (www.germlish.net)
Overall Production: Detlef Kessler
Printed in Germany

AMA 610425E
ISBN 978-3-89922-191-6
ISMN M-50155-145-3

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Preface

"Art doesn't come from being able to do something, but from having to do it" Arnold Schönberg

At the beginning 1980s I gave various lectures on the topic of guitar technique. The idea to compile my guitar playing methods into a book originated at this time. Although I was often requested by my students and course participants to publish a book on guitar technique, it took more than two decades for this compendium to finally appear. By now I am actually very thankful for this. My 40 years of teaching experience has added numerous facets to my conceptual approach.

Of course my ideas concerning guitar technique are based on the pioneering achievements of the great masters of the guitar, above all Giulani, Sor and Tárrega and naturally Pujol, Carlevaro, Llobet and Segovia as well. Without them this book would be inconceivable. But the question remains: is an additional technique book for guitarists actually necessary?

I say yes! Guitar technique has advanced so vastly in the last three decades that it is now time to take this into account. Guitar performance has never been at a higher technical level than it is today and there is no prospect to the end of this development.

In my first year of studies, I was impressed by the quantity and diversity of the technical practice material that was available at the time. Later I found it difficult to deal with this large offering of exercises effectively. Therefore the idea to present the material in a more clearly arranged fashion was already developing in my mind at an early stage.

In this book I have attempted to, while organizing the material and presenting it in a more assessable manner for practical purposes, add several new exercises as well – each of which addresses a technical and musical aspect of playing – and in addition add to the practice sections a comprehensive description of the exact movements performed by each hand as well as a detailed explanation of exactly how the sound is produced. This book is rounded off by a "Short Introduction to Systematic Practicing," a chapter on fingering techniques with explanatory examples as well as further important topics such as "Tuning the Guitar," "Playing from Memory – Memory and Mental Training" and "Stage Fright and Fear of Performing." The examples found in the "Technical Practice Guides" at the end of the book should provide the guitarist with a real orientation for practicing technique. They are extremely helpful when dealing with this handbook and will be explained in depth in the "Suggestions for Using this Technique Handbook."

As the exercises found in each chapter are almost all ordered progressively according to their level of difficulty, this handbook is also suited for less advanced players. For example, a guitar teacher can use this technique handbook for almost any playing level as a supplementary or sole method book. The flamenco guitarist will find equally as much material as the rock guitarist, who for example in the chapter "Coordination of the Left and Right Hands" would employ a pick instead of his fingers. The slur exercises for the left hand make sense for any guitarists of all genres.

A book of this magnitude cannot be completed without the help of others. At this point I would like to thank above all my students as well as my colleague and friend, Hans-Werner Huppertz, who supplied me with very valuable suggestions. Representing the many experts that made this book possible, I would like to thank Jörg Falk who provided the aesthetically appealing notation, Thomas Kaiser, Julia Gray, Günter Schillings, Georg Schmitz for his continual support of this comprehensive project and Tina van den Berg for her review of the written text. My special thanks go to my publisher Detlef Kessler for his patience over the many years as well as my editor Karin Stuhrmann. Without them and their tireless, critical minds, the book would have never come into existence in its present form.

No book can replace a teacher. But in learning and teaching, it can be of great help and provide many impulses and stimulation.

Lohmar, im November 2010 HUBERT KÄPPEL

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Introductory Words by Aniello Desiderio

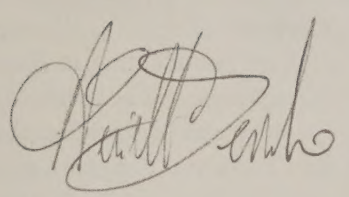
I met Hubert Käppel for the first time almost 25 years ago. He was conducting a master class at the International Guitar Festival in Volos, Greece which I participated in as a 16-year-old back then.

His reputation among young guitarists was already legendary at this time. A maestro who set new standards regarding sound, volume, technical precision and profound interpretation.

I am therefore more than pleased that I, as his colleague at the Koblenz International Guitar Academy, was able to follow and accompany the origination process of this work at hand.

May this unique compendium of technique in which the bulk of the knowledge, the experience and the dedication of a Major soloist and teacher flow together, be helpful to current and subsequent generations on the difficult and diligent path of becoming a successful guitar virtuoso.

Naples, November 2010



Suggestions for Using this Technique Handbook

This technique handbook consists of three parts:

A theoretical part 1 that begins with short but effective instructions for systematic practicing and then deals with different postures, the motion sequences of the hand-arm system as well as extensively discussing proper tone production.

A practical part 2 with comprehensive practicing material accompanied by appropriate method-oriented, didactical explanations. Almost every conceivable technique for modern guitar is covered here.

A theoretical part 3 which contains such topics as fingering technique, tuning the instrument, memory and mental training as well as technical practice guides.

Part 1: The best way to start this method book is with the short guide on how to practice. This isn't only about practicing technique, but about practicing creatively in general. The guide is written so that every guitarist – whether slightly or very advanced – can understand it. The successive chapters about posture, sequences of motion etc. can be systematically gone through and accordingly put into practice. They can also serve as a source of reference.
It's worthwhile for every guitarist to study the extensive information covering the right hand's role in tone production. Your tone or sound can always be improved upon and constitutes that which is characteristic and individual about any musician.

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Part 2: To achieve a better overview, this begins with exercises in each of the **4 main technical areas: arpeggios, coordination of the left and right hands, scales and slurs in the left hand, all of which should belong to your daily practice routine**, whereby coordination exercises and scales can alternate with each other. The chapter on arpeggios and scales contains, in addition, further method-oriented and didactical suggestions for practicing.
The following chapters "Tremolo" and "Flamenco Techniques" are self-contained practice guides that deal exclusively with both of these important topics. In the chapters "Supplementary Technical Exercises for the LH" (shifting, stretching, independence exercises etc.) and respective for the RH (exercises for changing between apoyando (rest stroke) and tirando (free stroke), thumb and alternating stroke exercises with fixated fingers etc.), all the remaining techniques are discussed. The exercises are ordered progressively according to their level of difficulty, numbered for reasons of clarity within the chapter and offer every guitarist, irregardless of their individual playing level, sufficient practice material. The less advanced guitarist, if possible, should seek the advice of a teacher or more experienced guitarist when choosing his selection of exercises. The chapter on perfecting your musical expression should primarily be thought of as supplemental information regarding your study of interpretation.
The exercises with the addendum "TIP" are the most economical and effective. In them the essential practicing elements of guitar technique are introduced in a compact form. Lesser experienced guitarists' decisions regarding the most helpful exercises to select from the comprehensive wealth of practice material are thus made much easier. See the "TIP Directory" on page 244.

Part 3: Here the player will find **valuable advice for creating his own fingerings, tuning the guitar and topics such as stage fright as well as mental and memory training.** The topic of "Fingering Technique" is broken down into "Fingerings in the LH" and "Fingerings in the RH" for reasons of clarity. This leads to the issue that passages that apply to both the left and right hands are repeated. This chapter serves dually as a reference as well as a section that is to be worked through methodically.
The Technical Practice Guides (as well as the TIP addendum mentioned above) at the end of part 3 are valuable aids for your time management and exercise selection. There are three examples of both a 45 and 90 minute technical practice session as well as examples of a three hour session. The order of the exercises focusses on variation and alternation so your hands don't have a chance to tire out. You should make sure that you don't perform the exercises too forcefully and that you play only at a moderate volume level. It is also recommended that you strictly follow the guide at first in order to get a feeling for the proper balance of *tension – less tension – relaxation*. It's especially effective if you alternate your technical exercises with the practicing of a proper musical piece so to prevent symptoms of fatigue from appearing in your hands.

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Part One

Prerequisites and Basics

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I. Short Introduction to Systematic Practicing

"...for there are both good practicing and bad practicing, and unfortunately the bad is far more common than the good..." Ivan Galamian

What the distinguished violin pedagogue Ivan Galamian already said during the 1960s in the 20th century regrettably maintains its validity today at the dawn of the subsequent 21st century. Proper practicing is the first prerequisite for playing an instrument successfully. In order to be able to effectively work with this technique handbook, you have to first examine your practicing methods and mechanisms and, in certain cases, improve or perfect them. The goal is to achieve a **maximum** amount of effectiveness in a **minimum** amount of time.
The difficulty in practicing an instrument arises due to the fact that each musician is usually on their own during the learning process. With ordinarily just one hour of lessons or instruction a week, the student spends the Majority of his or her practice time without the supervision of a teacher. Mistakes, rhythmic inaccuracies and poor practice habits can creep into the process in this manner and can be avoided only by self-critical listening and constant scrutiny on the part of the student. This is why it makes sense for every student to adapt at an early stage and get used to **taking on the role of being his or her own teacher**.

Prerequisites

1. To ensure that your guitar is in perfect working order, please pay attention to the following points:
   - For those who practice little, your strings should never be more than 2–3 months old. If you practice 2 or more hours a day then you should change your strings at least once a month. Oftentimes they wear out even considerably faster.
   - The action of the fingerboard cannot be set too **low**, but also not set too high. Every player can check this for him or herself by simply performing a mezzoforte stroke at the soundhole on the 1st and 2nd strings: if the strings hit the frets, i.e. if they rattle, the action is too low. It's impossible to produce a clear, clean tone in this state. A higher saddle, manufactured by a guitar maker, can eliminate this problem. Placing a thin piece of wood, cardboard or firm plastic the width of the bridge as padding under the saddle to increase the height of the bridge is only a temporary solution. A new saddle is the preferred solution in order to guarantee optimal transmission of all sonic frequencies.

2. Your practicing space has to be comfortable. The room temperature shouldn't be either too warm nor too cold. The space should be well-ventilated as well. Make sure that the lighting conditions do not cause any problems while reading music and that you can see fingerboard clearly. The music stand should be positioned slightly to the player's left so that angle at which you view the sheet music only has to be minimally adjusted for you to take in the fingerboard. The height of the music stand should ideally match the player's approximate eye level. (In a public concert, the music stand has to be as low as possible so that the audience's view of the instrument is not obstructed.)

3. Your holding of the guitar should be comfortable yet subject to constant review to make sure that the freedom of motion necessary to execute any appropriate playing motions is given. Best suited to this task is a large mirror that is indispensable to the student in every learning situation. The less advanced student can check his sequence of motions in the mirror just like the more advanced student can (see "The Importance of Playing from Memory While Practicing," p. 19 and "III. Playing from Memory – Memory and Mental Training," p. 233).

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Organizing Your Practicing

Before you even pick up the instrument, you should ask yourself the following questions:

1. When is the best time to practice?
2. How much time do I have to practice each day?
3. What do I want to practice?

To 1: The question of when to practice during your daily routine is one that has to be answered individually. The amateur will probably want to practice after school or work and the music teacher before his teaching begins. The professional guitarist who is preparing a new program has to spend the entire day practicing, provided that his other commitments permit it.
In order to optimally take advantage of the practicing time you have, you can't allow yourself to be interrupted by telephone calls, visitors or other distractions. You will only attain optimal results if your full concentration is focussed on practicing.

Practicing requires a great degree of self discipline. It is an intense, complex procedure that requires calm, inner balance and complete concentration. In order to achieve the different, individual practicing goals that you've set for yourself, your practicing should be allotted a specific time during your normal daily routine during when it has absolute priority above all other activities.

To 2: How long you practice is also dependent on each individual's activities and substantially determines the "what" and "how you can practice." If you are studying a new piece, for example, but you only have an hour at your disposal to practice each day, then you're going to have to forego technical exercises at first. Only after three to four days should you return to working on technique, but then only for two to three days so that the piece of music you've just recently learned stays fresh in your mind. For daily practice sessions of three to four hours, a practice plan that you draw up before the session is indispensable. Please refer to the following point 3.

To 3: The "what to practice" determines how much time you want to spend on improving your technique and, on the other hand, how much time you're going to dedicate to the musical development of a work. The problems in each area are so varied that you will be forced to submit your practicing to a rough time and material schedule.

As it is often the case during practicing, unexpected musical and technical problems arise and new tasks emerge that have not been included in the plan. In this case, the plan in its present form cannot be adhered to and has to be modified with new objectives on a short-term basis.

But it's not only problems that make it necessary to deviate from your established schedule. If a specific exercise turns out to be especially efficient and helpful and you have the impression that spending an increased amount of time on this exercise will result in yet even more progress, then you should deviate from your practice plan and continue working on it.

Efficient practice orients itself to the needs of the individual and requires one to be both flexible and creative.

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Practice Objectives

Regarding both the technical and musical areas, it is pointless to practice without clearly defined study or practice objectives. It is difficult for many university level music students, as well as hobby players, to define practicing objectives, as this presumes they already possess knowledge of their own strengths and weaknesses. For this reason, the teacher has to repeatedly present to the eyes and ears of each of his students the things that are in urgent need of improvement. In addition, the student should teach himself to listen critically while practicing because he predominantly practices without the watchful eyes and ears of a teacher. It is essential for you to be able to check your own playing, i.e. for rhythmical precision, correct fingerings etc. and to correct faultily performed passages by immediately repeating them several times without making a mistake. It's often the case here that you'll be dealing with tiny, seemingly insignificant mistakes that the untrained ear doesn't detect or hardly notices. Accordingly, it is important to be mindful that you should always be refining and improving your critical listening skills so that you can readily recognize new practice objectives which you then approach step-by-step.

Practice objectives can be very diverse, are infinite in number and they often arise spontaneously while you're practicing.

As an aid and motivation for creative practicing, here is a small selection of important practice objectives which are applicable to every level of playing (LH = left hand, RH = right hand):

- Proper holding of the instrument (check and correct it if necessary!).
- Proper posture of the LH with regards to stability and resiliency.
- Stabilize the posture of the **4th** finger of the LH.
- Accurate and precise fingering close to the frets (as seen from the player's perspective).
- Precise, impulse-like playing motions of the fingers of the RH.
- Fluid and economic movements in general.
- Smooth Shifts of the LH that are performed as silently as possible.
- Automated sequences of motion during difficult passages.
- A beautiful, balanced tone and sonorous playing.
- Uniformly performed notes regarding dynamics and rhythm.
- Play scales in all keys with a beautiful, full sound.
- Perform ascending and descending slurs in the LH with a precise, clear tone and rhythmical exactness.
- Train the strength and endurance of the fingers of the RH without needlessly increasing the finger pressure in the LH.
- Systematically work out RH and LH fingerings and stick with them.
- Pay attention to rhythmical precision and ease (lightness).
- When improving your agility and speed, pay strict attention to the evenness and uniformity of the notes.
- Work out the phrasing.
- Learn to play from memory by breaking down a composition into small, manageable sections.
- To prepare for a performance, play through a work without stopping (even if you make small mistakes).

On Practicing Technique

Advanced guitarists or conservatory students are often unsure of whether their general practicing session should begin with either technical exercises or practicing a specific musical work, concentrating on its interpretation in a broad sense. Both approaches are basically possible.

What is important is that your mental concentration is kept alive and that you remain alert for as long as possible through the use of rich and varied practice material. Whether you're involved with interpretation or technical exercises, the practice material has to be structured so that things stay interesting for you and you enjoy the session.

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If you practice technical exercises for too long a period, then you'll hardly have any energy and time left to practice your interpretation of a piece. That's why it is advisable to not only vary the material you're practicing, but also, as is required in your daily practice routine, to begin one day with technique and the next day with interpretation. The ratio between technical practice time and musicality practice time should be under constant observation and be adjusted according to the different demands of the repertoire you're playing at any given time.

What follows is a list of various important aspects and practices that will help you deal with practicing technique in a better and more efficient fashion.

1. The beginner should not get bogged down with technical exercises – only a few minutes a day at the most. Having fun with the instrument and enjoying music in general should be his priority. Technical exercises can be integrated into his lessons in a playful way as otherwise, the beginner might lose his motivation.
2. Technical exercises should be viewed as "musical" exercises. Here attention is paid to a clear, beautiful tone, a precise, accurate and bouncy rhythm, balanced dynamics etc.
3. The advanced player will quickly arrive at a point where he realizes that, without practicing technical exercises, he will not improve. He should explore technical exercises in the four main areas at an early stage: **I. Arpeggios, II. Coordination of the LH and RH, III. Scales and IV. Slurs in the LH.** Of course attention should be paid to the other technical areas as well. If you have, for example, two hours to practice each day, you can spare half an hour for technical exercises. If you want to learn and study a larger musical work, you should divide up your practicing time as suggested in the following point (4).
4. On the first day you should dedicate two hours exclusively to the musical work. On the second day you should practice an hour of technique and spend the other hour on the piece, on the third day exclusively the piece and on the fourth day technique and the piece and so on.

   This practice method in which technique is not practiced every day but every second day can also be applied to players on different playing levels. Above all things, it's most appropriate shortly before a scheduled public recital or concert performance.
5. **Integrating breaks into your daily practice routine is a basic element of efficient practicing.** When practicing technique, breaks aren't only important for increasing your comprehension by allowing things sink in, they also prevent you from injuring your muscles and tendons. But the breaks shouldn't be so long as to interrupt your concentration or allow your muscles to lose their suppleness and flexibility either.
6. The guitar is technically one of the most delicate instruments and thereby one of the most difficult instruments to play. To attain the ultimate technical command of the instrument is virtually impossible. But to this day, the importance of working on technique is underestimated by many guitarists and not enough time is spent on it. The time you spend on technical exercises – or as *Ivan Galimian* so appropriately says: the "building phase" – should be equal to the time you spend working on interpretation.
7. **If you are facing large technical deficiencies or general technical uncertainty, then often the only hope is an intensive "technical sabbatical" that lasts from three to five days consisting of several hours each day. Most important here is that you exercise self control and observe the signals your body sends regarding excessive strain and symptoms of fatigue. Short breaks for relaxation must be allowed for in this case (see No. 5!). During long, technical practice sessions, it is vital that the constant switching between different technical practice areas and not just the varying of exercises within a single sector is maintained. This serves to prevent the appearance of signs of fatigue and increases both your relaxation and ability to concentrate for longer periods (see also "Intensive Technical Practice Guide," p. 241).**

   It's also helpful when you have an experienced teacher/musician at your side. The length of time indicated here (three to five days) should only serve as a rough estimate for a potential "technical

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sabbatical"; the actual time can individually vary a great deal. Intensively practicing technique can, if performed optimally, achieve impressive progress not only in the technical area but, first and foremost, in the musicality sector as well. **Musical imagination and its realization begin to converge as your ability to musically express yourself improves.**

What follows is an example for switching between the different technical areas of the instrument:

- 20 min. arpeggios
- 2–5 min. rasgueado exercises
- 20 min. arpeggios
- 10 min. LH slurs
- 1–2 min. arpeggios on open strings to relax the LH (**RH only!**)
- 10 min. LH slurs
- 10 min. scales
- 5 min. crossing strings in the RH on open strings to relax the LH (**RH only!**)
- 10 min. scales
- 5 min. LH independence exercises
- 5 min. tremolo exercises on open strings (**RH only!**)
- 5 min. LH independence exercises

These are only just a few examples of the countless variations and possibilities; see also "V. Technical Practice Guides for Daily Practicing" on page 238.

8. **Self-created technical exercises – creating exercises on your own requires that you are able analyse your playing with all its strengths and weaknesses.**
Technically challenging passages have to be scrutinized regarding the various technical difficulties they present. It is often the case that fingerings – especially those for the RH – have not been rigidly established. This can cause many problems. Defining the fingerings and following them strictly in your practice routine, both independently for the LH and RH, can be one of the solutions to this issue. **With all self-created exercises, it is important to isolate difficult elements, simplify them and then reshape them into manageable and straightforward exercises.**
It can also be helpful to transform a relatively easy passage or exercise into a distinctly more difficult one. Even a technically difficult passage can be altered to be even more challenging. This then allows the original passage to ultimately be seen as having been less difficult. Each exercise in this book should serve to inspire the creativity of each individual student when creating new exercises.

On Sound, Rhythm and Tempo While Practicing

Sound and rhythm are the primal components, the main parameters of music. The "right" tempo ensures that both can evolve ideally. Tonal and rhythmical mistakes usually arise because too quick a tempo is chosen. But too slow a tempo can also distort the music to a degree where recognizing any musical coherence is made impossible. Playing too fast while practicing and performing, provoked by impatience and lack of imagination regarding a specific piece of music, is equivalent to a plague which is still wide-spread today. It is highly detrimental to the learning process. Many musicians, and among them many guitarists, would play a lot better if they would just reduce the tempos at which they practice and perform.

Hence, for correct and effective practicing, the following applies:

1. Choose a tempo that you can manage throughout the entire piece. In other words, all motion sequences, even at faster tempos, can be performed fluidly and without experiencing coordination difficulties between your hands.
2. Practice slowly! As "slowly" has yet to be defined, here are a few aids for orientation:
   - Simplest rule: half tempo of the final tempo (which is of course relative and dependent on many factors).
   - Begin to practice a work at a distinctly slower tempo than half tempo so that the difficult sections appear easy and then slowly, i.e. using a metronome, increase the tempo gradually (see "Practicing with a Metronome," p. 18).
   - Even if you have a work firmly under your belt, always resort back to a very slow tempo while practicing.
   - Sporadically alternate between slow and fast tempos, always in a controlled fashion.

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3. **"The musician's bible begins with the words: In the beginning, there was rhythm."**
This telling quote from the eminent piano pedagogue Heinrich Neuhaus conveys that rhythm, as the most important component in music, is at the top of the list of all musical parameters. **You must always have your rhythm under control – and if necessary – even with small rhythmic inconsistencies – be ready to correct them immediately!** When confronted with difficult rhythmical structures, the tempo of the entire piece should be chosen so that these passages sound clear and comprehensible.
It is necessary to keep in mind that you maintain precise rhythmical impulses in the fingers of the LH, **particularly with ascending and descending slurs** and also when alternating between LH slurs and RH strokes! Based on the different methods for creating a sound with the LH and RH, Minor rhythmical inconsistencies can occur. Furthermore, the notes have to be dynamically adjusted to each other (i.e. RH soft attack, LH slur distinctly!).

4. ***"Playing scales with an unpleasant sound is equally as inadvisable as playing Chopin with an unpleasant tone..."*** *Heinrich Neuhaus*
This applies to all instrumentalists, guitar players naturally included. Undoubtedly you should keep your mind on producing a clear and full sound when practicing technical exercises; this also applies to playing slurs with your LH, for example (see No. 3 above). A beautiful sound or a pleasant, balanced tone should never be sacrificed for improved, technical dexterity or fluidity. This is easier with individual notes than with chords, which, taken in their proper musical context, have to be sonically balanced in their performance.
As a general rule: He who pays attention to his sound when practicing technique will make a beautiful sound whenever he plays.

Motivation

"Only that which you do easily and gladly will become habit and be of assistance to you at all times."
Moshe Feldenkrais

The prerequisite for learning an instrument is predominantly a love for music and the instrument, a strong, powerful mind and the willingness to give it your all. Also, the simple pleasure of the movements themselves as well as combining them together in sequences can, now and again, be sufficient motivation to practice properly and effectively for hours.

But sometimes it's hard to practice, for example before a concert, an important audition, exam or competition. Especially when you need to "get down to business," the motivation to practice can be hard to find. This can have to do with the repertoire that you've been working on for an extended time or with your fear of failure. You can often overcome these motivational blockades with technical exercises. They make you feel technically fit and help you infuse more expression into the music.
Also, it is often hard to get motivated to practice "old" repertoire pieces which need to be prepared for a specific performance. Here you can also resort to technical exercises or even the learning of a new, separate work three to four weeks before the scheduled performance, for example, to counter the lack of motivation.
You can guard against the fear of performing or stage fright by systematically practicing to be properly prepared for the occasion (see "IV. Stage Fright and Fear of Performing," p. 236).

Fundamentally, systematic and effective practice is the best means by which to get out of a motivational crisis. By "forcing" yourself to practice correctly, you will quickly experience success and your initial reluctance will be forgotten in a hurry. As with all motivational blocks, you have to keep sight of the ultimate goal which should be to provide others with pleasure via your musical presentation. Once you've reached this goal and experienced success, the path getting there won't appear so intimidating.

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Practicing with a Metronome

For some musicians, the metronome remains a practicing aid that is viewed with skepticism. By now however, many have recognized that using a metronome can lead to excellent musical results. A musically gifted person will never become a musical "square" by practicing with a metronome, i.e. be misled to play unmusically. In this day and age, practicing without the aid of a metronome is hard to imagine. There are two ways to use a metronome while practicing:

1. As the master source so you can check your timing against a regular, steady meter.

   In slow movements, a metronome is often not employed to validate the tempo at which you are playing. However, a musician's ability to perceive a steady tempo – especially during slow movements – is often overestimated. The tempo fluctuations that result are particularly annoying because they could be easily alleviated through the use of a metronome. No musician should consider himself too good to **verify a tempo with a metronome, even for frequently performed works and even if he is sure that he is not varying the tempo at all**. It is often advisable to establish the tempo of a piece at the very beginning. Specifically, it can be a lifesaver to have metronome markings in a chamber music setting. On the contrary though, the metronome markings provided by composers are not always feasible and should be altered accordingly.

2. As a practicing aid for slowly "forcing" difficult works, movements or passages by gradually bringing them up to speed.

   Gaining speed slowly or "forcing" the tempo higher with a metronome for difficult passages or works is extremely effective if you start practicing them below even the simplest of tempos (for some movements, this could mean even well below half tempo). However, when increasing the tempo you should still stay considerably under the target tempo (the original tempo) as the forcing of the tempo higher has its greatest effect at relatively slow tempos. If the tempo gets too fast, motion sequences can no longer be properly controlled and practicing will only lead to a negative, counter-productive result.

   Forcing the tempo higher, for example with Bach's "Allegro," BWV 998 (♪ ca. 180–200):
   Here you start at ♪ = 60 and play the movement one time through without repeats.
   Then you adjust the metronome to ♪ = 62 and play through the movement again.
   Repeat the process at ♪ = 64, 66, 68 etc. until you get to ♪ = 84 or 88.
   You repeat the same practicing procedure the next day. On the third day you can start at a faster tempo, ♪ = 72, because the "basic tempo" is now adjusted higher. Now you are free to force the tempo up to ♪ = 100. After taking a few days off from the piece, you should repeat the process described above again. This practice method can be adapted to address any potential movement or passage.

   It's important that you never perform at a tempo where you could potentially loose control. Practice success can only emerge if you practice s l o w l y with a metronome over a long period of time.

   When practicing technique, it is advisable to only rarely use the metronome to check the tempo at which you are playing as, otherwise, it would force you to stay in time and as a result, neglect other important musical parameters such as tone and dynamics. The permanent ticking will disturb your discriminative abilities while you are listening to yourself and trying to examine multiple technical and musical details of your playing.

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The Importance of Playing from Memory While Practicing

Playing from memory can, for example at a public performance or concert, provide you with certain advantages. But it is absolutely essential when reviewing and correcting sequences of motion during the learning process. The direct visual self-control that you exercise when practicing should be extended to practicing in front of a mirror. The different viewing angles that result in front of a mirror contribute to help you understand and perform your physical movements better. This is only possible if you can confidently play a piece by heart. The first step is to memorize small sections of a work or technical exercise. These are then performed in front of a mirror and repeated several times. By viewing the same passage multiple times, you will begin to notice differences in your sequence of movements and if necessary, you should correct them.
When playing in the upper positions or scales over three octaves, playing from memory is absolutely required so that you are free to observe the changing of positions in the LH so that you perform them smoothly, avoiding any jerky movements. Your point of view should switch back and forth between the fingerboard and the mirror.

On the Frequent Repetition of Difficult Passages, Single Measures or Phrases

It is maintained that the noted composer and pianist *Franz Liszt* would repeat a particularly difficult passage around a hundred times (*Heinrich Neuhaus*). Irregardless of whether this is fact or fiction, it signals the importance of the frequent repetition of certain sections or spots within a work.

Practicing is, in large part, the constant repetition of measures, phrases, lines and entire movements.

A common mistake which occurs when repeating individual spots of a piece is the pointless "reeling off" of the same without consciously and critically listening. This dangerous form of indiscriminative repetition usually ends with negative results and the ultimate decline of a pupil or student.
The number of repetitions necessary differs from person to person. One player has to repeat a spot five times, another fifty times. Nonetheless, the proper way of repeating is always based on the same principles and guidelines:

1. You should only repeat a section with the utmost of attention and concentration! The player has to listen critically and compare versions that only seem identical, establish the differences and then, with each new repetition, try to improve upon them. A spot that you repeat 20 times should sound better and better each successive time.
2. Repeating sensibly also allows you to vary a spot, for example by practicing it at different tempos or, as with a continuous 16th note passage, including rhythmic variations (i.e. dotted notes).
3. The focus of your attention should alternate between the different musical parameters and/or the diverse technical objectives of your practicing.
   Examples:
   When playing a difficult passage for the first time, make sure you play as cleanly and accurately as possible.
   The second time, pay attention to your sound.
   The third time you should make sure the RH performs its part perfectly.
   The fourth time, make sure the fingers of your LH move to their optimal positions next to the frets.
   The fifth time you should try a quicker but still well-controlled version.
   The sixth time you should pay special attention to the required dynamics etc.
   Gerhard Mantel designates this vital approach to practicing as "practicing with rotating attentiveness."
4. With especially difficult passages, sometimes only the note-wise or measure-wise overlapping and "shifting" of a measured amount that you desire to practice can help. Behind this concept is the most consequential form of repetition.

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Example: the "Presto" from Bach's Lute Suite No. 1, BWV 996
Play measures 1 to 5 at a moderate tempo, stop there on beat 1 and repeat these four measures 6 to 8 times, applying the method outlined under No. 3 above. By shifting this four bar selection by 1 bar, you now play measures 2 to 6 the same 6–8 times, stopping again on the first beat of the 6th bar of the selection.
You then shift the four bar selection in turn so that you now play bars 3 to 7 in the same fashion. Use the same procedure again applying it to bars 4 to 8, 5 to 9, 6 to 10, 7 to 11 etc. until you reach the end of the "Presto."

This practicing method is very time-intensive but more effective than any other! You should also increase the frequency of repetition for the most difficult measures. After a longer break of several hours up to a day, you should then continue on from where you left off. Important here is that the piece that you have "dissected" in this fashion is, at the end of this intensive practice phase, put back together, for example by slowly playing the piece several times in its entirety.

This practicing method can be applied to single lines or even single notes:
If you are practicing a virtuosic run of, for example, 33 sixteenth notes in 4/4 time, first you repeat notes 1 to 9 about 10–15 times. Now you shift the selection you've made by one note and you repeat notes 2 to 10 about 10–15 times. Proceed similarly with notes 3 to 11, 4 to 12, 5 to 13 etc. until you reach the end of the run. Thereafter you put the run back together by playing through it slowly in its entirety multiple times; see "Practicing an Original Run Chosen from the Repertoire," p. 137.
Regarding all the forms and aspects of repeating that have been introduced here, the form of repetition in which musical parameters such as phrasing, articulation and dynamics are a priority should not be forgotten. These types of repetitions are creative, interpretative tasks and should connect seamlessly with your technical/musical oriented practicing and repeating.

II. Holding the Instrument

The verb "to hold" has established itself as a fixed term in instrumental pedagogy today. Taken literally, it is actually incorrect as "holding" is in contradiction to "moving." If you play an instrument, you have to be able to move: your body, your arms, your hands and your fingers. Holding a guitar, and extending it to include your general posture as well, you are constantly moving, even if only minimally. Your posture is actually being adjusted continually.

The posture (a snapshot of the way you carry yourself) that is described in the following has been used by many famous guitar soloists. Yet there are also other postures that have not yet become so common.. Posture is personal, something individual, with small variations which each person has to ascertain for themself. However, all functional, correct postures have something in common:

Good posture has to be comfortable and – as a point of departure for the performance of any conceivable motion that serves musical interpretation – relaxed! Moreover, it should allow the BODY and INSTRUMENT to merge into a single sound source (see "The Fusion of Body and Guitar into a Single Sound Source," p.22).

Every guitarist and guitar teacher usually has to correct himself or his student when trying to find the optimal posture, but avoid certain posture dogma at the same time.
For left-handed players: as the requirements for both hands are of equal dimension, there are no disadvantages for left-handers if they choose to play in the posture described here. The inherently stronger muscles of a left-hander can even be an advantage because the demands on the fingering hand (LH) are often more strenuous than those required in the RH. Futhermore, comparing and playing instruments employed by a guitarist who plays the guitar "upside down," i.e. swapping the roles of the hands, is impossible.

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The Four Points of Contact on the Body

To avoid a tilting of the spine towards the left or the right, hold the guitar in a central position in regards to your body. In this position, it should be carried along with all the movements of your torso as if the guitar forms a unified whole with your body. What also goes along well with this position is the classical posture with footstool which has been proven successful in concert and audition situations. It allows your hands and upper body more freedom to move which of course readily facilitates more expressiveness when performing.
You should sit comfortably and relaxed on the front half of a stool which has a flat sitting surface and no back. Put your left foot on the footstool and pick up the guitar with both your hands. Four points of contact on your body emerge:

① **the chest area**
② **the right forearm**
③ **the left thigh**
④ **the inner side of your right thigh**

With alternate postures including a pillow, leg or a guitar support, there is no direct contact between the guitar and the left thigh (point of contact No. 3). See "Alternate Ways to Hold the Guitar," p 22.
In the chest area, the guitar should not be held too low. Your chin should be about 15 to 20 cm away from the side of the guitar, whereby the pendulum-like motions of your torso while playing will continuously alter this distance (to sometimes even under 10 cm). You can observe body-centric holding of the instrument (in the area around the solar plexus) by watching flamenco guitarists.

Caution! The second point of contact, the spot on the right, upper forearm, shifts constantly due to changes in tonal colors and dynamics. Therefore, you need to pay attention that

1. your arm rests on the side of the guitar only under its own weight (i.e. without applying any extra muscular pressure)
2. you avoid raising your shoulder or arm.

Many guitarists compensate for the sharp edge where the sides of the guitar meet the top with some kind of padding on the forearm or with a curved, wooden insert that sits on the side. They believe that the sharp edge impedes their tendons and muscles, maybe even pinches them off. Applying too much muscular pressure is what is responsible for them feeling that they are being hampered. If you apply the correct amount of pressure, any type of cushioning becomes superfluous.

The Correct Angle Towards the Body

The angle of the guitar towards the body determines the direction in which the sound radiates from your body. As the guitar only touches the upper part of your chest at the point where the side meets the back, the instrument naturally assumes a tilted position where the sound is projected up and out into the space around you.
This angle and the slightly tilted position of the instrument are not only responsible for the optimal development of the guitar sound, but they support rather, also in a psychological sense, a positive appearance and thereby an inner attitude that doesn't allow the player to hide fearfully behind the instrument.

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If the guitar is held vertically or too close to your body, it won't project the sound well due to too much body contact. Furthermore, vertical positioning can lead to "clinging" which limits the freedom of movement for your arms and hands, thereby suggesting a fearful and introverted attitude towards listeners and audience members.

Alternate Ways to Hold the Guitar

With alternative postures, the footstool is replaced by another aid that raises the guitar to the appropriate height: a specially manufactured foam cushion or a leg or guitar support which is attached to the side of the instrument, either with clamps, plastic suction cups or something similar. The advantage of this posture is that the left leg is less burdened during long practice sessions as both legs are at the same height. This also enhances the sense of stability in your body.

The rare standing posture employing a guitar strap has a lot of advantages and is very helpful if you suffer from any type of spinal or back problems.
In order to be able to change your posture during long practice sessions, for example when changing from "normal" guitar posture to a more horizontal position of the guitar between your thighs, foam cushions and flexible guitar supports can be suitable aids while non-flexible and rigid supports will not allow the most minimal of posture adjustments.

Minimal alterations to your basic posture are however, in a rhythm of every 15–20 minutes, of great importance during longer practice sessions so that, first and foremost, the muscles in your back can get some relief, i.e. one side is not strained more than the other. Remaining in a single posture over a long period of time will inevitably lead to cramping and restriction of your ability to move freely in general.

The Fusion of Body and Guitar into a Single Sound Source

You should hold the guitar as described above, i.e. at the center of your body. Make sure that your chin is only 15 to 20 cm away from the side of the guitar. This reminds us of the posture used by a flamenco guitarist, who – without a footstool and with one bent leg crossed over the other – holds the guitar very close to his body. This type of posture communicates a deep, intimate connection to the instrument. It is this connectedness that we need to imitate. Raise both your hands and arms without bending your wrists and move them to the center of the guitar where the soundhole is. Your left hand will now be in the upper positions (XV to XIX) and your right hand almost on the fingerboard. Both are directed toward the middle of your guitar and body. One could say you are "embracing" the instrument.
Now, imagine that your arms and hands emit a certain type of energy which flows into the center of the guitar and your body, and then back into your arms and hands etc., in a closed energy circuit. If you now close your eyes, you can sense, as you do in autogenic training or meditation, that this feeling is directed at yourself, at your innermost sanctum. We can now proceed and imagine to be one with the instrument. The guitar is actually no longer perceived as a foreign object, i.e. something separate from yourself. When you bring your hands into playing position, perform a work by heart with your eyes closed and concentrate on the idea and the feeling of your body and the guitar fusing into a single sound source, you generate a special charisma that is characteristic to each and every performance or musical presentation and which capture's your audience's imagination.
Resulting from the fact that your body and the guitar are no longer two separate objects but rather a unified whole from whose center musical energy emerges, a new dimension has been created. It represents an additional force or energy which serves to transport your sound to an audience in a special, individual way.

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III. Left Hand Posture (LH)

As all humans have different size hands, it is difficult to establish generally valid rules of posture for the left hand (abbr. LH). In the following attempt to create a set of rules, I will address an average to large size left hand. Today, guitarists with smaller hands can choose from an excellent selection of instruments of smaller scale length (62, 63 and 64 cm). As with basic guitar posture holding the guitar, the different postures of the left hand, your fingering hand, are just snapshots. As the left hand moves from positions I up to XVI and from the 1st to the 6th string, i.e. along the full length and width of the fingerboard, the potential postures vary greatly.

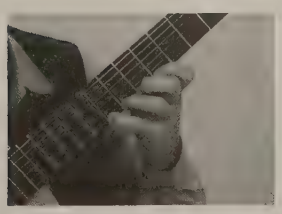
Four Universal Rules

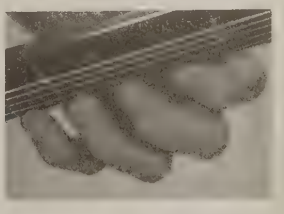
1. **Your elbow and left arm should never be allowed to be rigid or stiff!**
   In order to comfortably accomplish the necessary movements of the left hand without bending your wrist, your arm and elbow supplement the horizontal and vertical movements of the fingers. They "elongate" the fingers, as it were, so that they can take up their positions next to the frets without having to stretch too much. If you are moving your fingers to the 6th string, move your elbow towards your body. Moving to the 1st string, your elbow should proceed to the left and away from your body (see "The Motion of the Arm," p. 28).

2. To guarantee the full transfer of the strength in your fingers to the fingerboard, **the back of your LH and forearm should almost form a straight line.** This means that under no circumstances should your wrist be strongly bent!

3. **The thumb of your LH has to be free to move.** It can't ever be allowed to fully clasp the neck of the guitar and should only assert minimal counter pressure towards the fingers of your LH. Its basic position is across from your index and middle fingers, yet **tending towards the index finger**. Frequently, the light counter pressure of the thumb turns into an excessive pressing which can cause limitations to movement and cramping in the LH! The optimal amount of counter pressure is created when the position of the thumb, relative to the other fingers, adjusts continuously, albeit if only minimally. When fingering the treble strings, your thumb will be vertically **situated higher**, with full barre and bass strings, vertically **situated lower** on the neck. Starting with position XII it will move so low that it will touch the body of the guitar.

4. **The fingers must – as seen from the player's perspective – always be placed close to the frets**, on the high e' string almost perpendicular and as we move on down towards the low E string, less perpendicular. Definitely avoid laying your fingers flat on the strings, however (exceptions: barre chords and extreme stretching).





As the distance between the frets is considerably larger in the lower positions than in the higher positions, your fingers have to stretch more in the 1st position. Starting approximately with position V and up to X/XI, the required finger positions are easier to take on because they correspond to the natural physiognomy of the hand.

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The Principles of the Four Hand Shapes

To identify the fingers and fingerings of the LH, numbers have proven themselves useful, like with all string instruments:

Index Finger	=	1st Finger	= 1
Middle Finger	=	2nd Finger	= 2
Ring Finger	=	3rd Finger	= 3
Pinky	=	4th Finger	= 4

For the extended distance from the 1st to the 6th string and back, which demands considerable stretching and spreading of the fingers, there are endless potential finger combinations and hand positions which, when broken down and **oversimplified, can be reduced to four shapes**. They are most often simply combined with each other and appear isolated only when certain playing techniques are employed (playing in octaves, scales). These four hand shapes will help us describe four different snapshots of the LH in depth:

1. **The natural hand shapes spanning four strings and two frets (diminished 7th chord)**

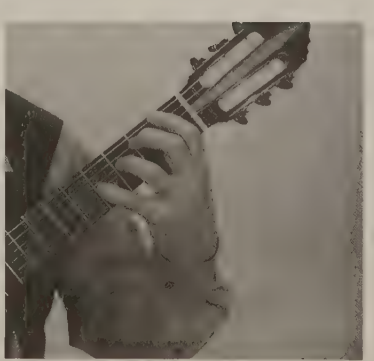
Finger 1 on the 1st fret of the d string
Finger 2 on the 1st fret of the b string
Finger 3 on the 2nd fret of the g string
Finger 4 on the 2nd fret of the high e' string

The natural hand shape is the most comfortable position for all the fingers. No stretching or spreading of the fingers is necessary. If you allow your fingers to simply "fall" onto the fingerboard, this is the natural position they assume.

2. **The LH shape in the direction of the bass strings (diagonal)**

Finger 1 on the 1st fret of the high e' string
Finger 2 on the 2nd fret of the b string
Finger 3 on the 3rd fret of the g string
Finger 4 on the 4th fret of the d string

3. **The LH shape in the direction of the treble strings (diagonal)**



Finger 1 on the 1st fret of the low E string
Finger 2 on the 2nd fret of the A string
Finger 3 on the 3rd fret of the d string
Finger 4 on the 4th fret of the g string

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4. **The LH shape on one string, also called the four finger position (horizontal)**
   All four fingers are placed on one string. For more details, see "Different Positions of the Left Arm-Hand-Finger System…" below.

So that the fingers of the LH can take on their individual positions within the shape in a direct, economical fashion, even after a large change of position, they need to have the proper stability. They shouldn't be allowed to swing or sway back and forth to the sides. This especially applies to the 4th finger which, together with the index finger, is responsible for the overall stability of the shape and which can be strengthened by practicing playing in octaves.
All LH shapes are at their widest in position I and loose breadth as you move into the upper positions. The higher the position, the smaller and more compact the shape. You can best observe this perhaps when, employing the 3rd shape in the direction of the treble strings, you play chromatic octaves from position I to position XII. In the highest positions, your fingers are forced so close together that they distinctly touch.
Fingering in general is more difficult here due to the missing counter pressure of the thumb.

Different Positions of the Left Arm-Hand-Finger System, Clarified by the Fourth Hand Shape

After you have assumed basic guitar posture (see II. Holding the Instrument, p. 20) , bend your left forearm (that is extended down next to your body with the inner surface of its hand pointing in) at the elbow more than 90 degrees in the direction of the fingerboard and move your upper arm slightly away from your body. The fingers (held straight up until now) are now bent approximately 90 degrees. If you look down at your LH now, you should be looking at your fingertips as they point towards your upper body and at the inner surface of your hand which, slightly tilted, faces the fingerboard.
Next, the fingers of the LH are placed successively on the high e' and low E strings in shapes I and VII. This way we generate 4 shapes – snapshots – in the fourth hand shape (four finger horizontal position) to illustrate the differences when assuming extreme positions.

The posture of the LH in position I on the 1st string, the high e' string:

1. **Upper arm** and **elbow** move away from the body.
2. The **wrist** forms a straight line with the forearm.
3. The **thumb should be across from the index and middle fingers** yet tend towards the index finger at the top of the back of the neck, forming almost a straight line with your forearm.
4. The **index finger** bends slightly to the back and left from its base joint. **The outer left side of the first phalange near the base joint lies very close to the guitar neck and almost touches it.** The end and middle finger joints are extremely bent.
5. The base joint of the **middle finger** should form almost a straight line with the back of the hand yet this joint has the tendency to lean a little bit forwards towards the guitar. The distance to the guitar neck should amount to 1 to 1.5 cm. The end and middle finger joints are extremely bent.
6. The **ring finger** bends slightly forward from its base joint. The distance to the guitar neck should be approximately 2 to 2.5 cm. The end and middle finger joints are less extremely bent than those in the index and middle fingers.
7. The base, end and middle joints of the **pinky** are all bent equally yet distinctly less bent than the index, middle and ring fingers. It should form a bridge-like, stable arch. The distance between the pinky and the fingerboard is larger than the other fingers and should be 3 to 4 cm.

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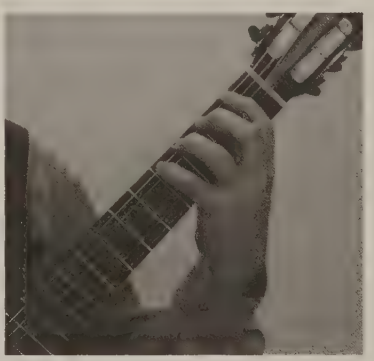
The posture of the LH in position VII on the 1st string, the high e' string:

1. The **elbow** should be near to your upper body, but not touch it.
2. The **wrist** forms a straight line with the forearm.
3. The **thumb** sits distinctly across from the index finger at the top of the back of the neck and forms a straight line with your forearm. (If you have big hands, the thumb can also extend out beyond the neck).
4. The base joint of the **index finger** is not bent. The back of your hand and your index finger from a straight line up to the middle joint of the finger. The end and middle finger joints are extremely bent. The distance to the neck of the guitar should amount to plus or minus 1 cm.
5. The base joint of the **middle finger** is slightly bent, the end and middle joints extremely bent. The distance to the guitar neck is plus or minus 1.5 cm.
6. The base joint of the **ring finger** is bent slightly forward, the end and middle joints are extremely bent. The distance to the guitar neck is larger than that of the middle finger and amounts to plus or minus 2 cm.
7. The **pinky** is bent at its base joint only slightly, its end and middle joints are extremely bent. The distance from the pinky to the guitar neck is, in the upper positioas larger than that of the other fingers yet amounts here to only plus or minus 2.5 cm.

The posture of the LH in position I on the 6th string, the low E string:

1. The **elbow** is led away from the body by your upper arm, however it's closer to your body than in the LH posture on the high e' string in position I.
2. The **wrist** is slightly bent (depending on the size of your hand).



3. The **thumb** sits across from your index and middle fingers at the base of the back of the guitar neck and extends the line formed by your forearm. (If you have smaller hands, your thumb will be quite low on the back of the guitar neck.)
4. You can hardly see the base joint of the **index finger** and its end and middle joints are slightly bent as it takes on the shape of a stable, bridge-like arch. The end joint is bent the most in order to achieve an angle of at least 45 degrees so to able to apply the ideal amount of pressure. The index finger should be allowed to touch the neck of the guitar along the seam where the base joint meets the inner surface of your hand.
5. base joints of the **middle** and **ring fingers** are slightly bent, the end and middle joints extremely bent. With both fingers, it's the end joint that's bent most. The distance between both fingers and the guitar neck amounts to just a few millimeters while both base joints extend distinctly (2 to 2.5 cm) above the plane of the fingerboard.
6. The base joint of the **pinky** is not bent at all, the end and middle joints are bent only slightly; it should form a stable arch. It is also the end joint here that is bent the most. Although the 4th finger has to stretch distinctly more than the other fingers, its angle should be at least 45 degrees as it touches the string.

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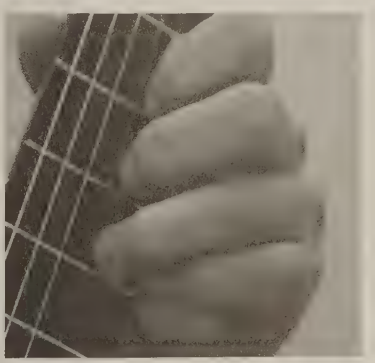
The posture of the LH in position VII on the 6th string, the low E string:

1. Your **elbow** should be right next to your body. The upper arm also touches the body.
2. Your **wrist** should form a straight line with your forearm.
3. The **thumb** sits across from your index finger on the upper part of the back of the guitar neck and should extend the line formed by your forearm.
4. The base joint of the **index finger** is slightly bent, the end and middle joints are strongly bent, but not excessive. The index finger should be allowed to touch the neck of the guitar along the seam where the base joint meets the inner surface of your hand.
5. The **middle finger**, **ring finger** and **pinky** are all slightly bent at the base joint and quite strongly in their end and middle joints. The end joints are, again, bent the most. The face of your hand is allowed to touch the guitar neck from your index to your ring finger.

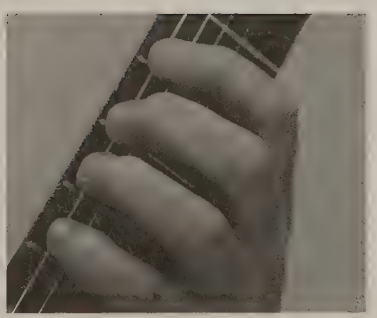
The Positioning of the Fingertips

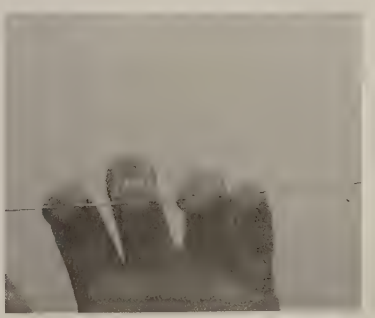
The exact positioning of the fingers is determined, on the one hand, by the placement of the fingertips either diagonally or lengthwise (parallel) to the strings and fingernails, or, on the other hand, the diagonal and perpendicular placement of the fingertips (outer left, middle, outer right). Examining the different indentations on the fingertips, you can recognize whether you've been playing in a perpendicular or diagonal position.
On the 1st and 2nd strings, the fingertips sit more **obliquely (diagonally)** on the strings, which means: **diagonally from the left to the middle** of the tip, sometimes beyond the middle as well.
When changing to the bass strings, the positioning changes **from oblique (diagonal)** on the 1st and 2nd strings **to lengthwise (parallel) to the direction of the string** on the 5th and 6th strings.

Fingertips sit obliquely (diagonally) on the b string:



On the low E string, the fingertips sit parallel to the direction of the string.





You can determine the exact position of your fingertips by, as an exception, pressing your fingers down hard on the strings. The indentations created on your fingertips exactly correspond to their positioning on the strings.

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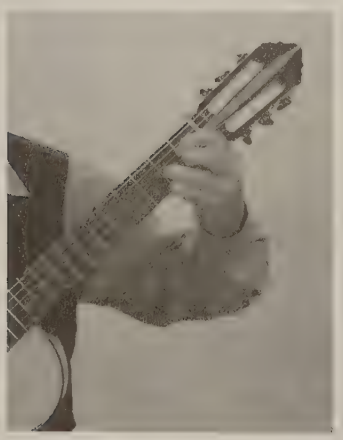
IV. Short Outline of the Movements of the Left Hand (LH)

The Shoulder-Arm-Hand System

As a comprehensive description of the complex movements of the LH would go beyond the scope of this book, here is a short outline of the most important movements of the LH.
The required movements of the LH and its fingers wouldn't be feasible without the support provided by the shoulder and arm. It is only the fine-tuned collaboration of the muscles, tendons and joints of your shoulder, arm, hand and fingers that make the economical movements of the fingers of your LH possible. In order to be able to adopt the different required positions of the fingers diagonal to and lengthways along the fingerboard, your upper and lower arms and wrist have to move so that your fingers have an easy job of it, i.e. they strain or stretch as little as possible.

The Motion of the Arm

To avoid bending your wrist too much (see III. Left Hand Posture, p. 23) and to maintain the tack hammer-like shape of the fingers when playing, the arm has to be moved distinctly away from the body (see photo at the bottom left) when in the 1st hand shape (diminished seventh chord, see p. 24) In the 2nd hand shape (see p. 24), it's almost touching your body so to avoid having to stretch your fingers too much, especially the 4th finger (see photo at the bottom right). In between these two shapes are an infinite number of variations of LH positions which are always accompanied by appropriate movement of the arm. This motion of the upper arm and the elbow joint is known as "arm control" amongst violinists, a term that couldn't be more applicable to guitarists as well.
Even during the vertical motion of the LH from the 1st to the 6th string and back, the upper arm moves slightly to the front and, conversely, to the back as well. The motion of the arm is minimal in this case. The wrist, which is normally held straight, should be allowed to lightly bend towards the 6th string here. The overall motion is more fluid and natural as a result.
The proper motion of the arm makes economical fingering easier and also helps you to retain strength in your fingers. The movements of your hand are not only less strenuous but look lighter and easier as well.



1st Hand shape (see p. 24): your arm is away from your body

2nd Hand shape (see p. 24): your arm almost touches your body

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Basic Motions of the Fingers

A prerequisite for a well functioning LH is uniformly trained finger muscles and a corresponding tactile sense in all of your fingers. The chief task of the fingers of your LH is the shortening of the guitar string in order to obtain different pitches. The strings have to be pressed down onto the fingerboard as close to the frets as possible. Another duty is the "lengthening" of the string. This is when you remove the fingers from the fingerboard. Both activities are achieved through **two movements made by the LH fingers**:

1. **the movement placing the fingers on the strings**
2. **the movement lifting the fingers from the strings**.

The placement movement begins at the base joint of the finger. It tstarts on by the calm and simple positioning of the finger on the fingerboard – for example before you begin to play a work – and on the other hand and more often, by a quick, percussive movement originating from the momentum of the finger.

Fingered notes of large amplitude (volume) notes found in a run or within a group of notes can only sound perfect if you place your fingers down on the fingerboard in an impulsive and percussion-like manner. The cellist Pablo Casals spoke often of "percussion" when addressing the LH.
If you don't have enough strength in your fingers to percussively place your fingers onto the fingerboard, you can supplement it by a quick, impulsive movement of the wrist. Equally, the fingers (especially the naturally weaker ring finger and pinky) can exercise more strength by conducting a larger movement to compensate for their insufficient muscularity. The placement of the fingers onto the strings must be performed with a high amount of precision as even a small straying away from the fret or weakly applied finger pressure, which should be adjusted according to the desired volume and tone intensity (lots of or little vibrato), can lead to a rattling or unclean sound.
The movement involved in lifting the fingers from the strings also begins at the base joint of the fingers. It necessitates much less strength than the placement, but requires the same precise impulse. There's often less attention paid to this because, in appearance, it's easier to do. When being lifted, your fingers stretch at the base joint while staying bent at the end and middle joints. If you remove all your fingers at once, all three joints of each finger will be slightly bent.
The fingers should retreat at the most to a position 1 to 3 cm away from the fingerboard so that they can reach a new position quickly if necessary. Frequently they are only raised up a few millimeters, for example during vertical movement from the treble to the bass strings (or its reverse) or they slide along the same string without leaving it as in a change of position over several frets. Also, if you're changing to an adjacent string in the same position, the fingers are only raised minimally so you can almost slide or glide into the new position.

Intonation and Finger Pressure

Although the metal frets roughly determine the intonation, perfect intonation is only achievable with the proper and appropriate finger pressure. Especially on the bass strings which are fatter, more finger pressure, in conjunction with a light vibrato and critical listening, can help you to correct your intonation. Even on the treble strings, intonation problems can be compensated for by adding slightly more finger pressure. If the note is too low and your finger pressure can't correct it, a slight vertical movement, i.e. "bending," of the string in the direction of the bass strings can help you to realize the desired intonation. However, the finger pressure cannot be allowed to be so great as to cause tension in the LH which would limit the flexibility of the fingers as a result.
Applying different amounts of finger pressure is also responsible for the intensity of the tone (example: a note with lots of vibrato) and for the initial dynamic of an individual note. A strongly plucked note requires more finger pressure than one that is plucked more softly. In musically expressive playing, the clearly defined start of a note can only be achieved with the appropriate amount of finger pressure. **In principle, the finger pressure required at the beginning of a note is greater than at the end and decreases in parallel with the fading away of the tone.**

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Left Hand Shifts

Shifting from one position to another is one of the most difficult sequence of motions in the LH. There are three kinds of shifts: the one **over an open string** as well as the **direct** and **indirect shift**. With all three types your arm, hand, thumb and fingers all move more or less simultaneously to the new, target position.

An exception is the **half shift** in which the thumb does not move, yet the fingers stretch to reach the next higher or lower position. They either then remain in the new position and the thumb follows suit or they return to their original position with the thumb not having moved at all.

A shift involves a quick movement of the entire arm – with clearly noticeable motion in the forearm (the bending/extending of the elbow) – the hand,
the thumb and the fingers.

When shifting **from the low to the upper positions**, the thumb moves simultaneously with the fingers. You have to slightly detach it from the neck of the guitar. When shifting **from the high to the low positions**, the thumb should be in motion towards the lower target position as soon as the final note in the original position is played (fingered) so that **a pulling motion emanating from the wrist is created**. When shifting, the thumb has to be able to act in a flexible way. It has to constantly change its position on the neck of the guitar, both vertically and horizontally. The counter pressure applied during a shift is always minimal.

In the upper positions, the thumb sits at the intersection of the neck and the side of the guitar, tending more towards the neck. Shifting should be executed by stretching the whole hand whereby the thumb does not leave its position but functions rather as a pivot point. If you have smaller hands, the thumb is placed next to the lower edge of the fingerboard and exerts little pressure which is quite easy to achieve on modern guitars because, if you look across their tops at eye level, you can often see that they have an elevated fingerboard.

The easiest **shift is the one over an open string**: its ringing allows the LH time for the change and always guarantees it will be "legato."

In the **direct shift**, the finger assumes the same position it had in the starting position in the new, target position. A special issue here is the 4th finger when changing to a higher position. It has to be moved so that the posture of its arch-like, bent knuckle (middle) joint can always be maintained, even in the highest of positions. It cannot be allowed to follow its natural tendency to slip off to the side and twist away.

With the **indirect shift**, the finger that performs the shift will be replaced by another finger when it reaches the new, target position. When changing to a upper position, the following finger combinations 1-2, 1-3, 1-4, 2-3, 2-4, 3-4 won't prove to be difficult at all. The reverse combinations are all the more difficult the farther the fingers are apart from each other, admittedly 3-1, 4-2 and especially 4-1.

Shifting to a lower position, it's exactly the same process but inverted: 1-3, 2-4 and 1-4 are the difficult ones here. In these shifts, the fingers have to be drawn together as closely as possible in order to perform the motions as legato as possible. The thumb is, again, sent in advance so that a "pulling" motion in the hand can occur.

Stretching and Contracting the Fingers

In order to guarantee an economical and unstrained performance of the LH, you should use every possible opportunity to relax your LH because even the four finger horizontal shape (4th Hand Shape, p. 25) in the 1st position requires every finger to stretch. If all four fingers are constantly kept down on the fingerboard, this can be strenuous for the LH over time. That's why your fingers, when they're not needed for a brief moment, should be lifted off the fingerboard. With scales and runs it's even possible that only the finger that is occupied with creating a sound at any given moment is active so that the others can be allowed to rest.

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If, for example, when playing in the lower positions only one finger is active and you're sustaining a longer note. You can contract the other fingers together around the active finger at a short distance from the strings. If only the 1st finger is playing, the others hover close together above the fingerboard so that they're almost touching each other (depending on what position you're in). If it's the 2nd finger that's playing, 1 and 3 hover close to 2 above the fingerboard. This relaxation technique is very advantageous for vibrato sections in slow movements and pieces.

Another example for the contracting and relaxing of the fingers is the use of the 1st and 4th fingers when playing two different strings over two neighboring frets: for example "e" on the d string at the 2nd fret with your 1st finger and "g" on the high e' string with your 4th.
Likewise, it's better when alternating notes in half tone steps on a single string not to use neighboring fingers but to employ the 2nd and 4th fingers. This will save energy because the fingers don't have to stretch.

Fingers 1 and 4

Fingers 2 and 4

If stretching is unavoidable, you should definitely take advantage of the next available opportunity to contract your fingers together and have them rest.

Ascending and Descending Slurs

A special aspect of guitar technique is the creation of a sound with the fingers of the LH by percussively placing the finger on or pulling it off a string. The slurred tones that are produced correspond to a legato effect which, considering just the two slurred notes, could even replace the traditional articulation and slur markings, especially those found in early music. If more notes are grouped together under a slur marking however, this guitar "legato" cannot appropriately reproduce the phrasing intentions of the composer. As a result, using the term "legato" for ascending and descending slurs is dubious as a musical legato can only be partially approximated by the technical legato presented here.
The starting point for an **ascending slur is stable LH posture**. Following the stroke in the RH, a single finger of the LH is percussively catapulted onto the string from a steep angle and with plenty of momentum and speed so that a note is created upon impact.
The ascending slur can begin on an open string, however it most commonly starts from a fingered note **whereby the finger pressure of the initially active finger is shifted to the newly placed finger immediately after the attack**. Developing a feeling for the shifting of weight and pressure from finger to finger can only be achieved through slow and deliberate practicing.
The movement starts at the finger's base joint, similar to the impulsive motion of the fingers already discussed (see "Basic Motions of the Fingers," p. 29). To achieve a clear and distinct tone, the LH fingers have to gather momentum from several centimeters away from the fingerboard. They should be allowed to bend back a little bit beyond the stretched base joint of the fingers. In exceptional cases, the wrist can support the fingers by also bending back a little bit and thereby allowing the increased momentum of the fingers when they initiate their playing motion. This wrist movement has to be so integrated into your playing movements that the actual motion of the wrist is hardly visible. The whole combined movement appears harmonious, fluent and natural.

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The limit regarding how far the fingers are allowed to move away from the fingerboard is hard to define. A relaxed, loose style of playing often requires larger movements of the fingers. You should always try to find a balance between economical and relaxed movements.
In a **descending slur, the first note is played by a finger of the RH. However, the second note** is produced by pulling off **one finger of the LH**.
Through these different methods of tonal production and the resulting differences in the way they sound – especially with the descending slur – both notes have to be adjusted to each other concerning volume and tone quality.
On all the strings except the first one, the motions involved in the descending slur correspond to a kind of "apoyando attack" towards the adjacent string. The impulsive motion of the finger executing the slur is stopped by the next higher string.
This finger feels the resistance of the string up to the point where it can be lightly overcome and then it springs down with an impulsive movement to the next higher, adjacent string. The motion is a mixture of an attack and a simple "flipping" like when you snap your fingers. It doesn't require a lot of strength, but rather a tactile sense which can feel out just the right moment to overcome the resistance of the string as well as control the energy of the attack.
The finger which plays the lower note has to maintain its stable position during this process and perform **a slight, non-visible counter movement which can only be felt at a muscular level**.
As a matter of course, this technique is also executable at piano and pianissimo volume levels. The adjacent string is then only slightly affected by the finger being pulled off. The technique involving not touching the neighboring string at all is the exception to the rule; it is only recommended when pulling off results in an open string. Example: Sor, op. 9. Also see "Ascending and Descending Slurs with Open Strings," p. 150.

Barre

With barre, which is implemented almost exclusively with the index finger of the LH (a barre using the 4th finger is the exception), there is no outward visible motion. Once you've assumed the barre, whether small or large, it stays statically in place. Yet above all things it demands, in addition to muscular strength, a shifting of your strength and dexterity. Quite often it reveals to guitarists – even the experienced ones – their performance and muscular limits. Pain is unfortunately a common occurrence.

For this reason, the first barre rule is:
avoid every barre that you can replace with an alternate fingering.

In many cases, you can substitute a smaller barre for the larger one over 6 strings. Before you finger a barre, you should always check over how many strings it is required.

There are three different size barres:

1. small barre over two strings (most often 1 and 2, less often 3 and 4, but other string pairs are possible),
2. medium barre over three or four strings,
3. large barre over five or six strings.

With a barre fingering, the index finger is stretched – with the small and middle barre starting at the middle finger joint, with the large barre at the base joint.
The strength that's required to press the barre finger down does not increase with the larger the barre, but it depends rather on which phalange (section) of the stretched index finger the strength has to be distributed to. **This is because the most important technique associated with a barre fingering is the shifting of strength within the index finger.** The strength for the barre originates in your arm and is transferred to your index finger and partly to your thumb (in the form of counter pressure). When you press all six strings down with your 1st finger, it requires a lot of strength. Most of the time however, only three or four strings of the barre over six strings are affected, a fact which you will

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comprehend when you have a look at the following examples. Here you have to pay special attention and make sure that both folds of skin that enclose the middle phalange of the finger are not placed **directly on** a string. The rule dictates that both these folds of skin are to be placed **between** strings.

1. Small Barre

2. Medium Barre

3. Large Barre

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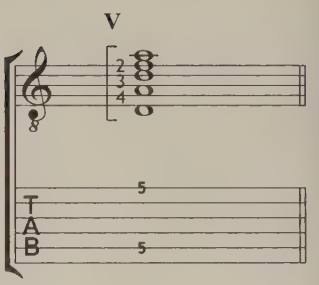
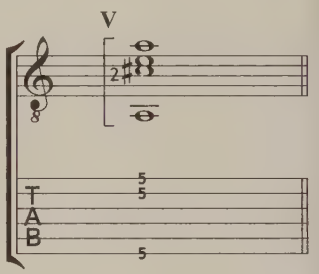
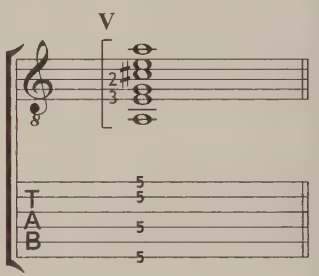
Examples:

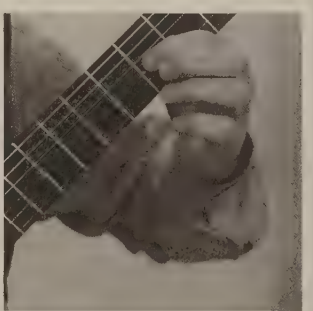
1. Two notes sound in this barre: "d" on the 5th and "a" on the 1st string. The 1st and 5th strings are depressed. Your barre finger is slightly curved and pressure is applied to a treble and a bass string while the strings in between are touched.

2. Three notes sound in this barre: "A" on the 6th, "e" on the 2nd and "a" on the 1st string. You press down the 1st, 2nd and 6th strings. The barre finger is slightly curved and pressure is applied to two treble strings and a bass string while the strings in between are simply touched.

3. Four notes sound in this barre: "A" on the 6th, "g" on the 4th, "e" on the 2nd and "a" on the 1st string. The barre finger is fully stretched and extended. The finger should be deployed so that no folds of skin come to rest on the 4th string so that the pressing strength is transferred to the 6th, 4th, 2nd and 1st strings. In an ideal case, the folds of skin should lay on the 3rd and 5th strings.



Barre technique is a technique of endurance. Alternating maintaining the barre followed by subsequent short breaks is the most effective practice method: i.e. 45 seconds of barre playing followed by a 15 seconds break including LH thumb and thenar (the ball of muscle at the base of the thumb) massage. The Llobet barre exercise found on page 187 is excellently suited here.
Besides endurance, the switching of the index finger from its normal position to its barre position and back again, often combined with a shift, has to be specifically practiced. The frequently encountered change from the small and medium barre to the normal index finger position in combination with a string and position shift should be executed in a gliding, almost floating motion. Please examine the following four photos:

Barre over three strings at the 5th fret

1st finger in motion to a new position



1st finger on the 3rd string in position III

Vibrato

The required movements here are described in detail in the vibrato exercise section on page 209.

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V. Right Hand Posture (RH)

Posture

As the right hand (RH) is directly involved in producing a sound without an intermediary medium, accuracy and tonal control have to brought into harmony with each other by good RH posture. It not only plays a key role in sound generation and is responsible for a beautiful, full tone and balanced sound, but rather, on top of this, also provides your fingers with the necessary sense of security when plucking the proper notes and strings.
The basic posture of the RH is influenced by which side of the nail you decide to pluck with, the left or the right, and the type of attack you choose, the nail or the fingertip. As questions regarding which side of the nail and type of attack are no longer discussed today and plucking with the left side of the nail has proven itself in practice, our discussion of posture will only address nail attacks. (Read more on fingernails in the following chapter which begins on page 37.)
In contrast to the numbering system used for the LH, the fingers of the RH are denoted by letters which come from the Latin names of the fingers:

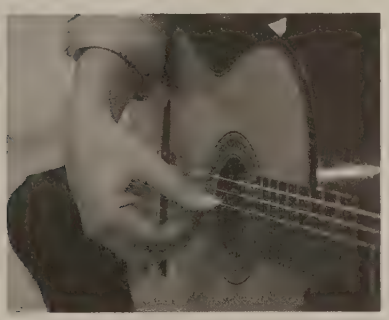
Thumb	=	**p (pollex)**
Index Finger	=	**i (index)**
Middle Finger	=	**m (medius)**
Ring Finger	=	**a (anularius)**

The pinky, which is seldomly used in classical guitar technique, is often labelled with a "c."

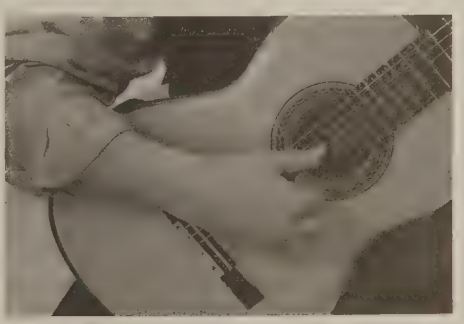
To establish our initial starting point a little bit to the right of the soundhole (as seen from the player's perspective) and without applying any pressure, place your

thumb on the 5th string (A) or the 4th string (d),
index finger on the 3rd string (g),
middle finger on the 2nd string (b) and
the ring finger on the 1st string (e').

This results in a snapshot of the basic posture the right hand should assume so it can facilitate all the necessary movements of the fingers and the hand for the different types of attacks featuring the following characteristics:



1. Your wrist should be 6 to 8 centimeters (one hand width) away from the top of the guitar and slightly bent to the outside. It should represent, without being extremely bent, the highest point of the line formed by your forearm and the back of your hand.



2. The forearm and back of the hand should form a straight line which you should check in front of a mirror.

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3. The thumb should be located, as seen from the player's perspective, about 1 centimeter away from the fingers.

4. All your finger joints, base, middle and end, are bent so that a semi-circle is formed. In doing so, your base and end joints are bent only slightly, your middle joint more severely. In no case should extreme bending be allowed to cause tension in the hand.

5. Index, middle and ring finger are so close together that they lightly touch. Their fingertips should form a straight line.

6. Taken together, the thumb and fingers form the shape of an open "O."

Base Finger Joint Position Relative to the Strings

As described above, you touch the **4th**, **3rd**, **2nd** and **1st strings** with **p - i - m - a**, but don't apply any pressure. The correct posture of the RH can only be obtained if your playing fingers, in free stroke attack (tirando), are able to set the strings vibrating so that strong and sonorous notes are created without hitting the adjacent strings by mistake. This proper playing angle relative to the strings is achieved by moving the forearm and hand slightly down without removing the fingers from the strings.

As an orientation aid for the optimal playing angle, the positions of the base joints of the fingers above their respective strings should serve as a guide and be checked in front of a mirror:

the base joint of the index finger
should be perpendicularly above the g string,

the base joint of the middle finger
should be perpendicularly above the b string,

the base joint of the ring finger
should be perpendicularly above the e' string.

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VI. Tone Production and a Short Outline of the Movements of the Right Hand (RH)

Introduction

Even though the LH can modify the tone quality of a note and partially influence its intensity as well, it is the RH that plays the essential role when it comes to tone production. Aside from the harp, the guitar is one of the few stringed instruments that does not produce its sound through redirection or an intermediary medium (i.e. a bow), but directly with the fingers of the RH. On the one hand, this allows endless possibilities for tonal color and shadings while, on the other hand, it can contane intricacies regarding tonal and musical control when it comes to technique. Another fact to be considered is the disparately smaller sphere of action in comparison to the LH. In its vertical expanse from the 1st to the 6th string, it measures almost 6 while in its horizontal length along the strings up to 30 centimeters, of which much less than half is in use. In this very small space, the RH has to provide a maximum amount of assurance in both sounds and the required sequences of movement.
A further difficulty is caused by the fact that, for the most part, the strings are played with a tirando stroke originating "out of midair." Your fingers hardly have any possibility to "anchor" themselves anywhere.
Today, one absolute prerequisite for professional playing in the 21st Century is, undisputedly, plucking notes with your nails, which, as opposed to the fingertip attack, has established itself as a more nuanced and tonally diverse stroking method. Still, there are and will always be discussions about the optimal shape and length of the nails. Regarding the end result though, it's only a full tone with all its dynamic facets and a beautiful sound that counts.

Nail Shape

Nature has outfitted humans with differently shaped nails. Two nail shapes are especially suited to guitar playing (viewing the fingertips from above):

1. The arch shaped nail:

2. The straight nail:

Hybrid shapes, which are in-between these two types, are also suited for professional guitar playing, whereas others, for example nails grown from the nail bed or nail shapes that curve up or down, have limited application. Sooner or later, a player with imperfect nails has to make the decision whether he is going to play with artificial nails or initiate a personal nail shaping procedure. If you have weak nails, there are certain products that can be recommended that directly strengthen the nail tissue. However, natural products such as olive oil or similar, applied in a massaging fashion, can also help in part.
Very frequently, fingers found on the same hand will have straight as well as more curved nails, but this doesn't play a crucial a role in tone production as the shaping and filing of differently shaped nails is done in the same fashion.
The nail shapes that are described in the following sections work with all RH playing methods, including: tirando, apoyando, playing chords and rasgueado.

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Nail Length

Although the tactile sense provided by your fingertips performs an important role while playing, the fingertip ultimately has no direct effect on tone production. If your fingernails are too short however, this can have a negative effect.. Many guitarists believe that the fingertips make your tone more gentle and clear. Actually the opposite is the case and the explanation is simple: as the plucking finger leaves the string, the path it takes is via the tip to the nail which is the last obstacle encountered, but also the final element that shapes the sound. By making the effort to allow the fingertip to be part of the actual sound production process, the velocity with which the finger makes its way from the tip to the nail is slowed down at the fingertip. The result is often a "dirty," unclear tone.
Whether somebody plays with short or long nails fundamentally depends on the individual's desired sound concept. Short nails can make a beautiful sound, yet they are inferior when it comes to the variety of tonal colors achievable with longer nails. The expressive guitarist will favor somewhat longer nails. The idea that longer nails decelerate your attack is disproved solely by the fact that many guitar virtuosos perform with longer nails.
Principally, nail length will differ from person to person. Therefore we can't assume that there is a particular, accurately defined length for all. Most commonly, a nail shaped to play guitar will not be of a single length: it will be shorter at the edges, in the middle and at the middle left rather long. Your index, middle and ring finger's nails can all be of different lengths. Corresponding to its function as a melody finger, the ring finger often has a longer nail.
In order to be able to define what long and short nails actually are, let's start with a normal, round fingertip as a reference point. You can determine the length of a nail with a ruler or a file. Short nails end roughly at the highest point of the fingertip. The middle part of a long nail can extend 1 to 4 mm beyond the highest point of the fingertip, thumb nails are sometimes even longer.

Nail Shape of the Playing Finger

It can take weeks, even months, until you have found your personal ideal length and shape. As the nail shape also influences the sequence of movements during the attack, the correct nail shape is a prerequisite for the development of the muscles in your fingers and hand which are the elements responsible for a good and proper attack.
The wrong nail shape can so negatively impact the development of these muscles that the path back to a fully functioning plucking technique could require a Major and involved effort. The changing of the shape and continual experimentation with different playing angles is the only way to achieve the perfect nail.
At the same time it is important that the process of shaping and filing the nails is a continual one. For if your nails are perfect today, the day after tomorrow they could be too long and a few days after that, after experimenting and adjusting the length, too short.

The following general suggestions should serve to simplify the process in the search for proper nail length:

- To get a full sound on the instrument, the string has to be led along a certain route relative to the nail. This path, a kind of ramp, is responsible for the note being loud and sonorous.
- In order to give this ramp the proper shape, it has to be filed so that the string can move directly from the fingertip to the ramp without encountering any obstacles or resistance. In accordance, it should always be shaped and filed starting at the fingertip. The fingertip has to be lightly pressed down on a flat area, the filing surface.
- The filing surface can be: a metal file, a nail file with a foam pad or a ruler which is wrapped in file paper. This flat surface forms the string level at which the filing is done.
- From the left side of the fingertip, over the middle and on to the right side, the nail is shaped so that the string can be struck by any side of the nail without any resistance.

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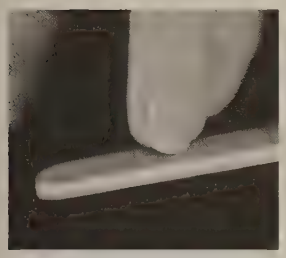
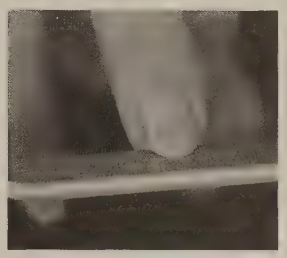
- Although principally the left side of the nail is used to strike the string and the longer ramp exists on that side, the right side of the nail must be provided with a small ramp of its own. If it isn't perfectly filed it can become an obstacle if you slightly rotate your finger while playing.
- If none of this works then you should get some medium-fine filing paper and place it over the strings at the soundhole. You then move your fingers on the filing paper as if you were actually playing; this allows you to approach your ideal nail shape to a small degree.

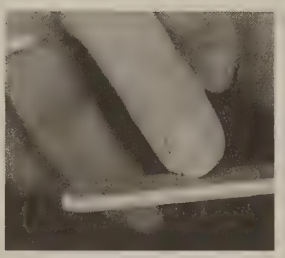
Pictures illustrating the filing process:



File and fingernail, left ramp



File and fingernail, middle



File and fingernail, small right ramp

File paper placed over the strings

Once you've gotten the perfect shape, the string is guided along the nail as follows:

- Your fingertip is on the string.
- The string slides over the fingertip on the quickest path and without the least bit of resistance to where the nail begins.
- The resistance of the nail, which is perfectly polished (see below), forces the string to move along its ramp until it finally arrives at the end of the nail.
- Now that no longer any resistance can be felt, the finger (fingernail) is set free.
- The note can sound!

Polishing the Nails

After the nails have been shaped, they need to be properly polished.
First the nail edges have to be rounded off with middle-fine file paper.

Then you wrap a wide nail file or ruler in fine file paper and polish the nails on a smooth filing surface using the shaping process described above. In the meantime, you should frequently round off the nail edges and test the tone quality of the nails on the guitar. At the same time, the granulation of your filing paper should steadily become finer over time. Repeat the procedure: polishing, rounding off, checking the quality several times and then at the end, **again and with lots of patience**, round off and polish the nail edges with the finest nail paper or even a leather shammy.

Note: When playing on the bass strings, the nails get worn-out. Not only is their polished surface roughened but the actual fiber of the nail is literally affected. You can avoid this problem by taping the nails with Scotch tape. After about 30 minutes you're going to have to change the tape, though.

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Playing Angle of the RH

The minimal distance between the strings contributes to the fact that the sphere of action for the RH is very small and limited. The distance between the strings cannot be increased, but by adopting a different playing angle achieved by turning the RH slightly to the left, the distance your fingers have to travel to strike the strings can be increased. Via this diagonal path, the fingers can execute their required motions with more strength and thus increase the volume of your playing.

Playing Angle 1

This volume effect can be intensified if you angle your forearm and wrist slightly towards the ground. Looking at it from the perspective of the strings, you are now using a different playing angle whose position is as follows: the base joints of your index, middle and ring fingers are now positioned directly above the 3rd, 2nd and 1st strings respectively. To increase the playing angle, just tilt your wrist a few millimeters more towards the floor (see "Base Finger Joint Position Relative to the Strings," p. 36). The striking motion now comes from below, similar to the striking motion associated with playing a lute. The position now assumed by your hand could be physically compared to a pair of tongs.

Playing Angle 2

Caution! **This diagonal stroke creates a scratchy sound on the bass strings.** In order to avoid this, the wrist has to be slightly tilted to the right when playing the bass strings so that the distance your fingers have to travel to strike the strings is decreased and the string is struck directly without it sliding across your fingernail.

A System of Springs

Before the sequence of motions is described, you have to be conscious of the fact that the **shoulder-arm-hand-finger system works like a system of mechanical springs** (see Ivan Galamian's "Principles of Violin Playing & Teaching").

Mechanical springs can be either elastic or inflexible, with many various degrees of firmness in between. The joints, tendons and muscles have to function in exactly the same fashion when a string is struck, i.e. set to vibrate. At any given moment you should be able to switch immediately from a state of the highest tension to one of absolute relaxation.
Every stroke, whether free (tirando), rest stroke (apoyando) or the striking of a chord is performed with the resilience of your "human" springs. Very rarely is only a single joint involved in a movement. More often than not it is the complicated interaction of several joints, tendons and muscles.
The often quoted **"relaxed" state of playing is actually unrealizable as it is only possible to absent the participation of each and every muscle**. Therefore it is actually impossible to play and be "relaxed" at the same time. If the term "relaxed state" before and after the stroke, i.e. before and after muscle activity, is meant, then we can can use this phrase colloquially, yet always carefully and with a corresponding explanation.

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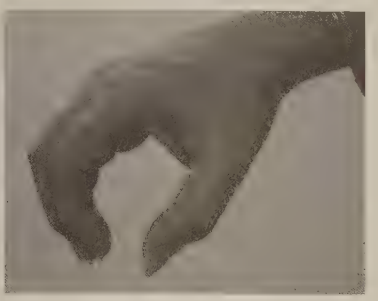
Tirando: Sequence of Motions

The free stroke, also called tirando (from the Spanish "tirar" = to pull), is the most important and most commonly used stroke in the RH. In order to be able to explain the required sequence of movements, you first have to be aware of the fact that there are two opposing playing motions within the hand:

1. the thumb strikes in a downward direction,
2. the fingers in an upward direction.

Despite the opposite directions, the thumb and fingers should not be allowed to collide. In order to have enough freedom of motion while playing, **all three joints of your fingers have to bend** as well as the base joint of the thumb so that they all don't – even those on adjacent strings – get in each other's way during a strong tirando stroke. For this reason you form, as already discussed in-depth in the chapter "V. Right Hand Posture" on page 36, an open "O."



The index finger, whose sphere of action inwards is larger than that of the thumb, is able to comfortably attack past the thumb. This is of Major importance in two-part playing.

before the simultaneous stroke of p and i

after the stroke of p and i

The sequence of motions in detail using the index finger stroke as an example (see the photos on page 42)

- Starting from basic RH posture, your index, middle and ring fingers are placed on the 3rd, 2nd and 1st, your thumb on the 6th or 5th strings.
- Fully concentrate on the index finger whose three finger joints are bent and slightly tensed, comparable to mechanical springs.
- Simultaneously apply pressure to the string until it sinks slightly below its natural level.
- The resistance of the string increases.
- Shortly before you execute the stroke, imagine a full and round tone in your mind.
- After briefly holding your breath, the resistance of the string is overcome by a distinctive impulse.
- The index finger attacks and moves slightly upward towards the palm of your hand, without hitting the adjacent string.
- In total, the overall movement should not be allowed to physically go beyond the second adjacent string (see the schematic depiction on page 46).

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As in every fluid movement, several joints, all three finger joints in this case, participate in the striking motion:
- the **base joint to a Major degree** including **small visible movement**,
- the **the middle joint to the greatest degree** including **the largest visible movement**,
- the **end joint to the least degree** including **almost no visible movement**.

Index finger
before the stroke

Index finger
finger after the stroke

Apoyando: Sequence of Motions

Although the rest stroke, also called apoyando (from the Spanish "apoyar" = to support), is one of the most well-known RH strokes, it is in less use at the present day than the tirando stroke. On the one hand, this has to do with the historical progression of guitar pedagogy in which the focus of beginners has now been shifted to the tirando stroke. On the other hand, today's repertoire concentrates more on polyphonic works for which the apoyando stroke is not suited. However, the guitar repertoire is stylistically so diverse that, especially in the Spanish repertoire, the apoyando stroke can be used frequently. Good, virtuosic players of today have excellent command of both techniques.
The sequence of motions is similar to the tirando stroke but with the difference that the finger does not move in the direction of the palm of the hand but stops its movement at the next lower neighboring string. By touching the adjacent string, the motion of the finger is halted immediately.

The sequence of motions in detail using the index finger stroke as an example
- The index finger is placed on the 3rd string using just a little bit of your fingertip.
- The finger cannot be allowed to dip down deep between the strings.
- Fully concentrate on your index finger.
- All three joints of your finger are bent, less than in the tirando stroke however, and comparing them to mechanical springs, they are tensed slightly.
- Simultaneously apply pressure to the string until it sinks slightly below its natural level.
- The resistance of the string increases.
- Shortly before you execute the stroke, imagine a full and round tone in your mind.
- After briefly holding your breath, the resistance of the string is overcome by a distinctive impulse.
- The index finger attacks and comes to rest with the upper part of the fingertip touching the neighboring string.

Here all three finger joints participate in the striking motion as well:
- the **base joint to a Major degree** including **small visible movement**,
- the **middle joint to a lesser degree** including **small visible movement**,
- the **end joint to the least degree** including **small visible movement as well a slight stretching!**

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Important! **The Motion of the End Joint**
You will detect a small difference in the end joint with the tirando stroke. In the apoyando it simply relents and is thereby temporarily stretched. This inconspicuous movement should not be allowed to be just any ordinary yielding, but correspond rather to the elastic motion of a spring.

Index finger
before the apoyando stroke

Index finger
after the apoyando stroke

Sequence of Motions when Alternating Strokes (m-i and a-m-i)

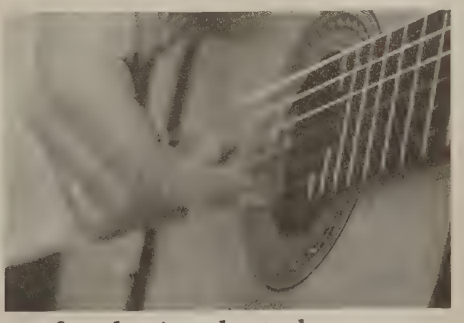
m-i
The detailed sequence of motions when alternating strokes is identical those of the tirando and apoyando. However, alternating fingers always results in the respective returning motion of the finger that is not playing as it moves back to its original position. In other words: the striking and returning movements cross each other. While the index finger is striking, the middle finger is moving back and vice versa. These movements have to be coordinated with each other at a slow tempo first.

As the alternating strokes become faster, the returning motion becomes an automatic movement. At a fast tempo, the returning and plucking movements correspond to a kind of "ping-pong" effect: one simply leads to the other. In order to coordinate both movements perfectly, it is absolutely essential to initially practice the stroking and returning movements at a slow tempo.

i after the apoyando stroke

m after the apoyando stroke

i after the tirando stroke



m after the tirando stroke

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a-m-i

The stroking frequency of three alternating fingers can be higher and therefore faster than with two fingers. The movement **a-m-i** is fundamentally the fastest three finger combination in tirando as well as apoyando (see "V. Tremolo," p. 161). The returning movements match those when alternating strokes between two fingers. Based on the differential independence of the individual fingers (the ring finger is connected via its tendons to the middle finger and pinky), it's advisable to perform the returning motion of the ring and middle fingers at the same time the index finger attacks. While **i** is attacking, **m** and **a** move **simultaneously back** to their original positions!

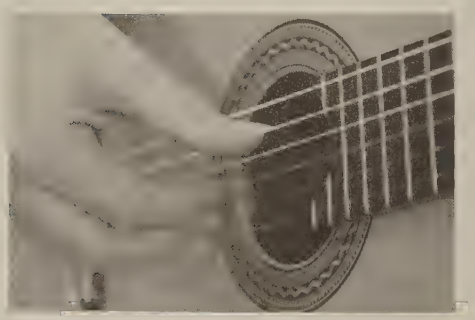
Thumb Attack: Sequence of Motions

The thumb is in use during both the tirando and apoyando strokes. Beginning with basic RH posture is the best way to explain the sequence of motions.

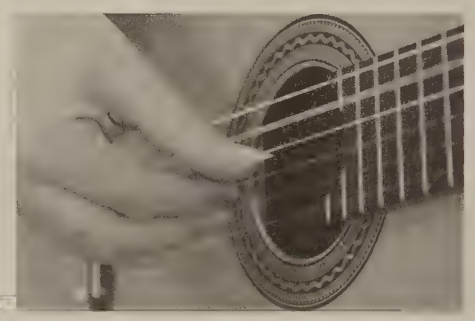
Thumb attack in tirando

- Index, middle and ring fingers are placed on the 3rd, 2nd and 1st strings.
- In an almost stretched state, the thumb is tensed slightly in accordance with the system of springs.
- The end joint brings the thumbnail, which is often too far away from a potential playing position, into a striking position by bending slightly. It has to, as needed to achieve a certain sound or to stop the strings, potentially bend even more and should not be allowed to stretch.

The further stroking procedure follows that of the tirando stroke with the fingers.
After the thumb has plucked without hitting the adjacent string, it springs back to its original position. It is important that the thumb, which attacks less frequently than the other fingers, bounces back so to be ready for a subsequent stroke.
The overall motion corresponds to a flat ellipse and should not be allowed to extend beyond the second adjacent string. The motion is initiated at the **base joint (near the wrist)** with a **distinct visible movement**.



Thumb before the tirando stroke



Thumb after the tirando stroke

Thumb attack in apoyando

The stroking process broadly matches that of the thumb stroke in tirando.
The end joint of your thumb is stretched however and the wrist, according to the tonal color you're after, is raised.
After attacking, the thumb comes to rest at the next higher adjacent string. It should remain there only briefly so that, on the one hand, the string is not muted by the the thumb, on the other hand so that the thumb is ready to strike again from its normal position.

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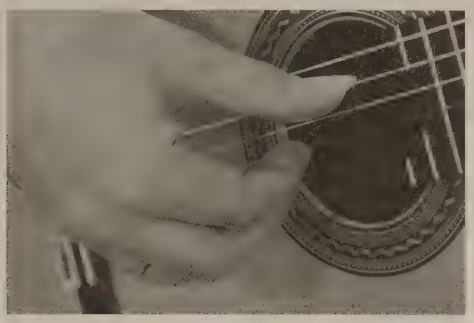
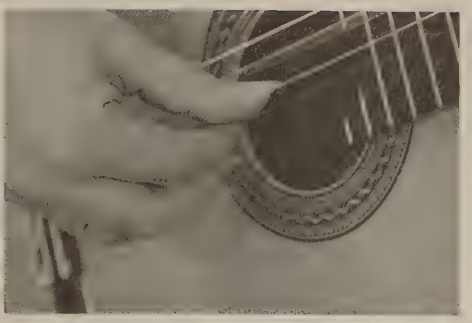


Thumb before the apoyando stroke



Thumb after the apoyando stroke

Tonal Colors and Point of Contact

To achieve expressive and tonally colorful playing, you have to take advantage of the entire RH sphere, from the bridge to the fingerboard. The necessary movements of the RH are governed by your upper arm, bending your elbow to greater or lesser degrees. The forearm then changes its point of contact at the intersection of side and top.

The additional vertical motion of the RH from the 1st to the 6th string is a combination of movements of the wrist (bent), forearm (upwards) and upper arm (slightly to the back). In reverse from the 6th to the 1st string: wrist (less bent), forearm (downwards) and upper arm (to the front). This all has to happen in fluid and harmonious movements.

It should be added that, similar to bowed instruments, the strings have different string tensions: near the bridge – very high, at the fingerboard – low. This forces the hand to move even more during an expressive interpretation so that it can find the right **point of contact**. If it's played strongly, a loud note close to the fingerboard will buzz. The ideal point of contact will thus be found near the bridge. In contrast, the point of contact for a soft and dolce note can be situated either near the fingerboard or also at the bridge.

Sometimes you'll want to change the tonal color in the middle of a certain phrase to make it sound more vivid. The point of contact can thus change along with the musical and tonal requirements, at times even from note to note. Only a refined, musical ear can decide where the best point of contact actually is.

Playing Chords (Several Notes Simultaneously): Sequence of Motions

Although the simultaneous three and four note chord stroke is a tirando stroke, the sequence of motions is completely different. When you compare it to other strokes, the main difference is that your fingers and thumb play simultaneously. In order to achieve absolute synchronization of the fingers when playing, the fingers **a-m-i** need to be perceived as a single unit and not three individual fingers. Therefore they should be held as tightly together as possible so that their fingertips touch.

The stroke in detail:

- Taking the opposite directions of motion of both the thumb and fingers into consideration, the RH assumes its basic, natural posture.
- The thumb is placed on the 5th string, as seen from the player's perspective about one to two centimeters away from the index finger. If it would shift too far to the right into the hand, the index finger wouldn't have any mobility anymore: the thumb would impede its attacking motion.
- Fully concentrate now on the **a-m-i** unit and the thumb.
- Press down lightly on the strings until they sink slightly below their natural level.
- The thumb and fingers tense in their fingertips as if they were mechanical springs until, ultimately, you have the feeling that **your thumb and a-m-i are one unit**.
- The resistance of the strings increases.
- The mental image of a compact sounding chord helps you to overcome the final resistance.
- Shortly before you execute the stroke, imagine a full and round tone in your mind.
- In a short, impulsive instant, the stroke of the fingers and thumb occurs and they immediately spring back to their starting positions (either on the strings or hovering just above them).

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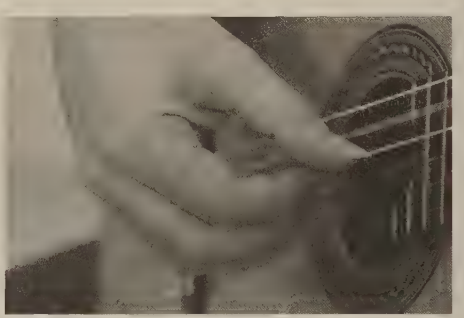
It is not only all your finger joints but also your wrist that participates in the stroke.
In the process, the **movement of the wrist** changes according to the speed at which you play, i.e. the frequency of strokes:

- at **slow speeds to a lesser degree** including **small visible movement**,
- at **fast speeds to a Major degree** including **large visible movement**.

Sequence of motions of the fingers:
- the **base joint to a Major degree** including **small visible movement**,
- the **middle joint to a lesser degree** including **barely visible movement**,
- the **end joint to almost no degree** including **almost no visible movement**.

Sequence of motions of the thumb:
- the **base joint of the thumb to a Major degree** including **small visible movement**,
- the **end joint of the thumb to a lesser degree** including **small visible movement**.

Before the chord stroke

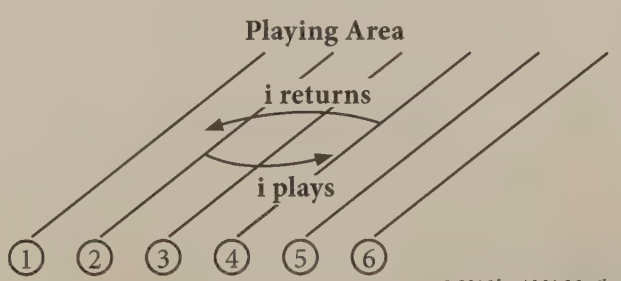


After the chord stroke

Arpeggios: Sequence of Motions

The sequence of motions of three and four note broken chords correspond to those of the tirando. As the frequency of strokes of the individual fingers in successive arpeggio patterns is relatively low – for the 6 basic arpeggios for example (see page 54) – each of your fingers and thumb has the same amount of time to attack and return to its original position.
With alternating arpeggio patterns, for example **a-m-a-i**, the returning motion matches that of the alternating stroke with two fingers. The attacking and returning movements cross each other.
To practice the returning motion and not adopt any superfluous, extra movements in the process, it is recommended to employ **"pure reflex development"** as an arpeggio practice method. In this method, the attack originates at the string. In so doing, the return motion is impulsively triggered by the stroke of the previous finger, see "I. Arpeggios" on page 50. The stroking movement should never be too grand. The stroking finger should never be allowed to extend beyond the second neighboring string and upon returning, never to overstep the area defined by the string that is to be played (see "I. Arpeggios," p. and "Tirando: Sequence of Motions," p. 41).

Schematic depiction of the playing area when striking the b string



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Part Two

Technical Exercises

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I. Arpeggios

Arpeggios, also known as broken chords, are, alongside LH slurs and synchronization and coordination exercises for both the LH and RH (scales), one of the most important daily technical exercises for guitarists.
Your arpeggio technique can only become reliable and precise through controlled and constant repetition. You will encounter the exercises presented here repeatedly in the scope of the available repertoire for guitar – especially in the classical sector. They are to be selectively integrated into your daily practice routine. It doesn't make much sense to play through many different arpeggio patterns just once. It's much better to concentrate on a chosen few and practice them intensively (see "Intensive Training of Important Arpeggios" p. 85).

The Practicing Units

The individual exercises are sorted into self-contained thematic groups (units) and designed for maximum effectiveness while practicing, for example by:

1. **alternating between difficult and easy arpeggio patterns,**
2. **rotating variety which prevents tension.**

Experience dictates that practicing 2 to 3 units has proven to be a successful approach. However, limiting yourself to 3, 2 or only 1 arpeggio pattern(s) of a unit can also be effective. The exercises can be compiled to address your needs and mixed and matched as necessary. The length of time that you practice them depends on your individual level: from 30 minutes to 2 to 3 hours a day for several days, anything is possible.

Endurance, Evenness and Speed

When practicing any arpeggio pattern, you have to pay close attention to the absolute evenness of the individual notes. A good basic volume level is **mezzo forte** and it is recommended that you play with a clear, full and beautiful tone. If your sound and the precision of your attack are thoroughly developed, arpeggios are something you should categorically practice **softly**.
Your attack has to be fast and precise. Each note has to – especially with not so advanced players – be performed with particular concentration.
In general, the following applies: **SLOWER is better than FASTER!**
You can develop the speed of your playing by practicing the reflex exercises presented on the following pages.
At an advanced stage you should add speed exercises to your regimen (see page 206).
Extensive repetition of the exercises is imperative to improve your endurance and strength.

Arpeggio Practicing Methods

1. Variable String Assignments of p-i-m-a

On a Single String

To increase the accuracy of the thumb and fingers, you should also practice each arpeggio on just a **single string**. The 2nd and 3rd strings are especially suitable for this as the treble strings have less of an abrasive effect on your nails.
Based on experience, the most promising and effective practicing of an arpeggio pattern occurs after approximately 20 repetitions. Recommended time per arpeggio pattern: 1.5 to 3 minutes per pattern (see "V. Technical Practice Guides for Daily Practicing" p. 238).

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On Four Strings with Variable Distance Between the Strings

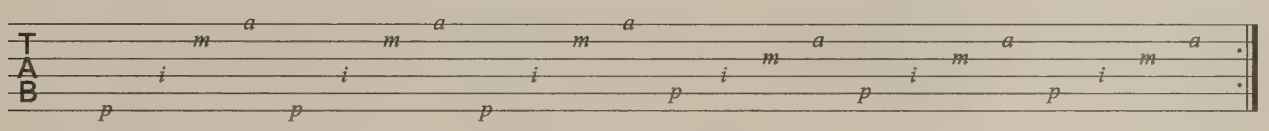
Practicing with variable distances between the strings results in many configurations.

Here are the most important:

Combination / String	1.	2.	3.	4.	5.	6.		7.			
						a)	b)	a)	b)	c)	d)
①	*a*	*a*	*a*	*a*	–	*a*	–	–	–	*a*	–
②	*m*	–	–	*m*	*a*	–	*a*	–	*a*	*m*	*a*
③	*i*	*m*	*m*	–	*m*	*m*	*m*	*a*	*m*	*i*	*m*
④	*p*	–	*i*	*i*	*i*	–	*i*	*m*	*i*	*p*	*i*
⑤	*(p)*	*i*	*p*	*p*	*p*	*i*	*p*	*i*	*p*	–	*p*
⑥	*(p)*	*p*	*(p)*	*(p)*	*(p)*	*p*	–	*p*	–	–	–

Caution! Alternate between No. 6a) and b) when practicing,
Practice No. 7a) to d) consecutively.

Here is an example for a possible combination based on numbers 4 and 5 in the chart above:



Unnatural String Assignments of a-m-i

Aside from the normal position (see position 1), there are 5 further positions with relatively unnatural string assignments of **a-m-i**. A simple arpeggio pattern like **p-a-m-i** becomes especially difficult when the normal string affiliation of a finger changes to an unnatural one. This is especially recommended when you are practicing an arpeggio pattern intensively.

Position / String	1.	2.	3.	4.	5.	6.
①	*a*	*i*	*m*	*a*	*m*	*i*
②	*m*	*m*	*i*	*i*	*a*	*a*
③	*i*	*a*	*a*	*m*	*i*	*m*
④	–	–	–	–	–	–
⑤	*p*	*p*	*p*	*p*	*p*	*p*
⑥	–	–	–	–	–	–

When alternately practicing finger positions 1 and 2 (m), 3 and 4 (i), and 5 and 6 (a), m, i, and a always play on the 2nd string respectively.

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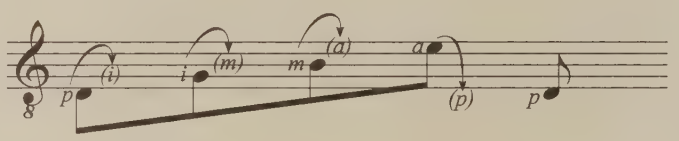
2. Impulse and Reflex Development

The most important method for practicing your attack is the development of your impulses and reflexes, inappropriately known as "preparation" up until now. It is the most effective way to develop your playing accuracy. The action of striking a note is divided into a two-part process: after impulsively placing your finger on the string that is to be played, the actual striking or playing of the string follows. We will differentiate between **five practicing methods**:

Pure Reflex Development

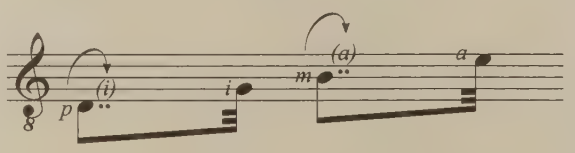
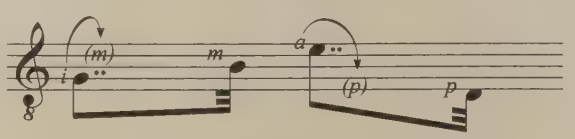
It is with a rapid, reflexive motion (full of momentum) that the finger jumps down to the string before the attack. The stroke itself happens directly on the string. This method applies to any type of guitar literature.

Example: **p-i-m-a**
p attacks and this is the signal for **i**, the following finger, to immediately jump to the string that is to be played in a reflex-like fashion (after **p** has played). Now **i** attacks and **m** immediately jumps to its string. Then **m** attacks and **a** jumps to its string.
The **tempo** here should be **very slow** and the **movement** to the respective string **extremely quick**.

When applying this practicing method to a single string – which is highly recommended! – the notes will sound in a staccato-like fashion. This is not to be confused with "Staccato Reflex Development" found on page 51.

Pure Reflex Development for a Double Dotted Rhythm

In contrast to pure reflex development, here it's always just the single finger that plays the short note in a double dotted rhythm that jumps to the appropriate string. Thereby only each second finger takes part in the reflex development. In order to be able to incorporate all fingers into this practice method, the rhythm also has to be practiced in reverse.

Example: **p-i-m-a**

After **p** attacks, **i** jumps;
after **m** attacks, **a** jumps reflexively to the string.

For ease of understanding, the reverse rhythm starts with **i**:
after **i** attacks, **m** jumps; after **a** attacks, **p** jumps reflexively to the string.

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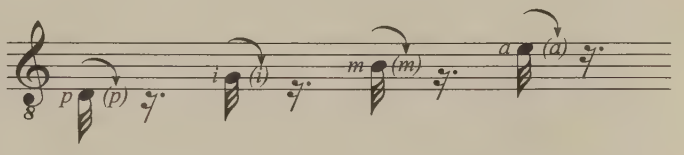
Staccato Reflex Development

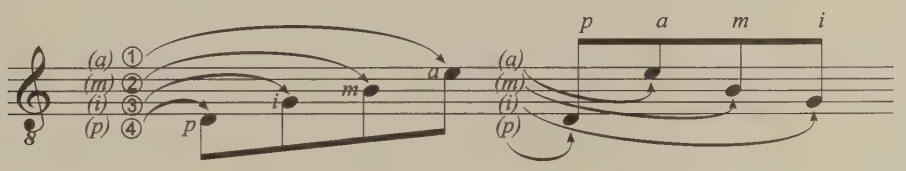
This is applicable to all arpeggio patterns. Here the thumb and RH fingers (p-i-m-a) are permanently bound to their respective strings. They only leave their positions on the strings during the attack and spring back in an elastic, **reflexive** motion. The result is a very short, staccato-like note.

Example: **p-i-m-a**
Before the attack, **p-i-m-a** are placed on their respective strings. Your fingers and thumb press down lightly on the strings. **p** attacks and immediately springs back to its string in an elastic fashion, **i** attacks and returns similarly, **m** attacks and returns and finally **a** attacks and also springs back to its string in an elastic fashion.



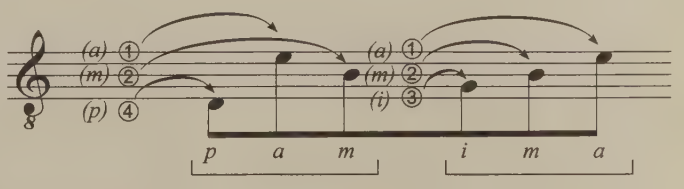
Impulse Development Using Simple Planting

The fingers **p-i-m-a** are placed on the 4th, 3rd, 2nd and 1st strings respectively. The thumb and fingers come off the strings in the sequence of their respective attacks. In the ascending arpeggio patterns **p-i-m-a**, this fingering sequence feels natural to the fingers.
In descending (i.e. **p-a-m-i**) or in ascending/descending patterns (i.e. **p-m-i-a** or **p-m-a-i**), the fingering commands that are sent from your brain to your fingers have to be closely scrutinized at first and changed if necessary so that the correct finger plays. If you proceed too quickly or don't concentrate enough, it's easy to play with the wrong finger. Simple planting is only possible on 4 note arpeggio patterns.



Impulse Development Using Two-Part Planting

Example: sextuplet arpeggio **p-a-m-i-m-a**
The fingers **p-a-m** are placed on the strings first. After **p-a-m** have come off their respective strings in succession after performing their impulsive attacks, **i-m-a** are placed on their respective strings and play as well. Thereafter play again with **p-a-m**, then **i-m-a** etc.



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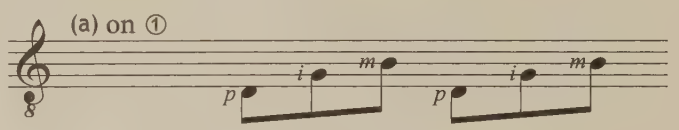
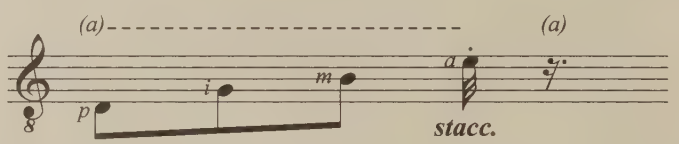
3. Practicing with Fixed Fingers (RH)

Here a finger remains strictly or partially fixed ("bound") to its string. While the non-fixed fingers play normally, the "bound" finger touches the string with just enough pressure so that it remains stationary there and the motions of the other fingers do not cause it to lose its position on the string. There are two types of fixing:

1. The **permanently fixing** of a RH finger (see also "Alternation Exercises with Fixed RH Fingers," p. 203) which is only possible with three note arpeggios such as **p-i-m**, **p-i-a**, **p-m-a** and **a-m-i** The fixed finger never leaves its string.
   Example: **a** is permanently fixed on the 1st string:

2. The **partial fixing** of RH finger which can be used with all arpeggio patterns. The fixed finger remains on the string until attack is required in the arpeggio pattern. It then plays the string in a staccato-like fashion, only to immediately return to its fixed state on the string.
   Example: **a** is fixed to the 1st string until its attack:



Chord Progressions and LH Patterns

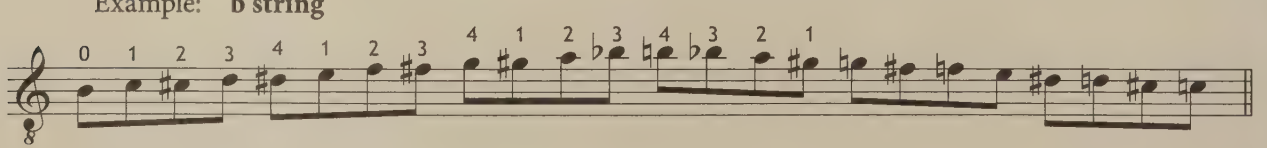
Open Strings

In order for you to intensively concentrate on the sequence of motions, a clear tone and the evenness of the individual notes in the various arpeggio patterns, practicing on **open strings is absolutely essential**. Yet to avoid a monotonous tone and thereby also the danger of fatigue, i.e. reduced concentration, it is recommended to **change from open strings to certain chord progressions and LH patterns**.
Chord progressions and LH patterns should be simply structured, i.e. without placing any high demands on your LH.

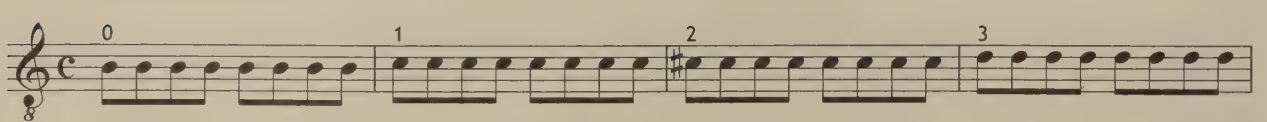
Chromatic Scale on One String

Applicable for all strings.

Example: **b string**



Possible execution:



etc.

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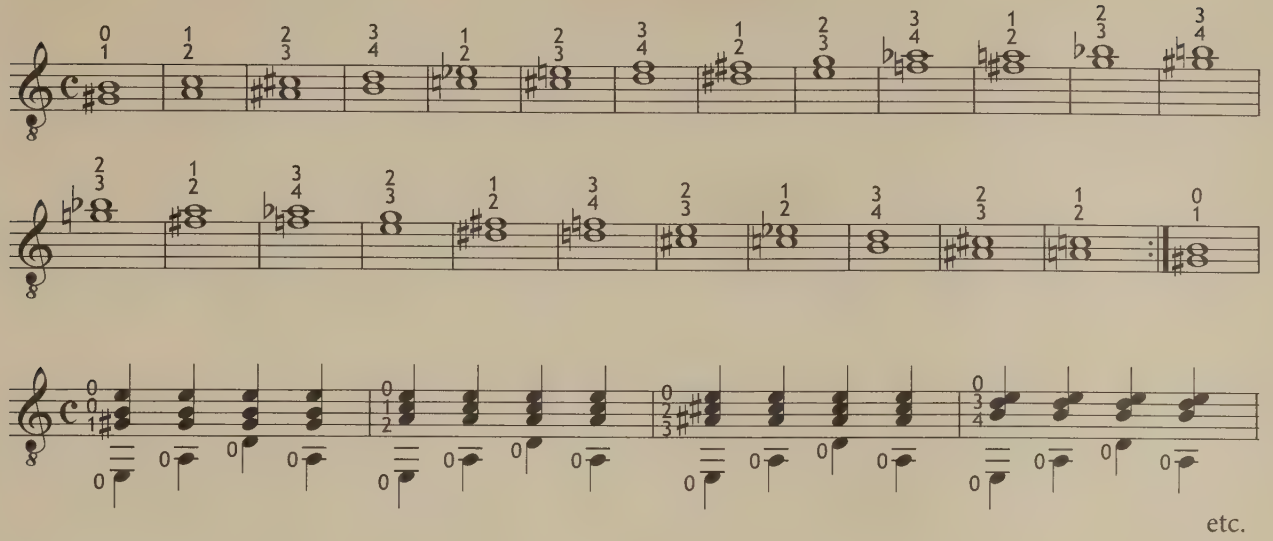
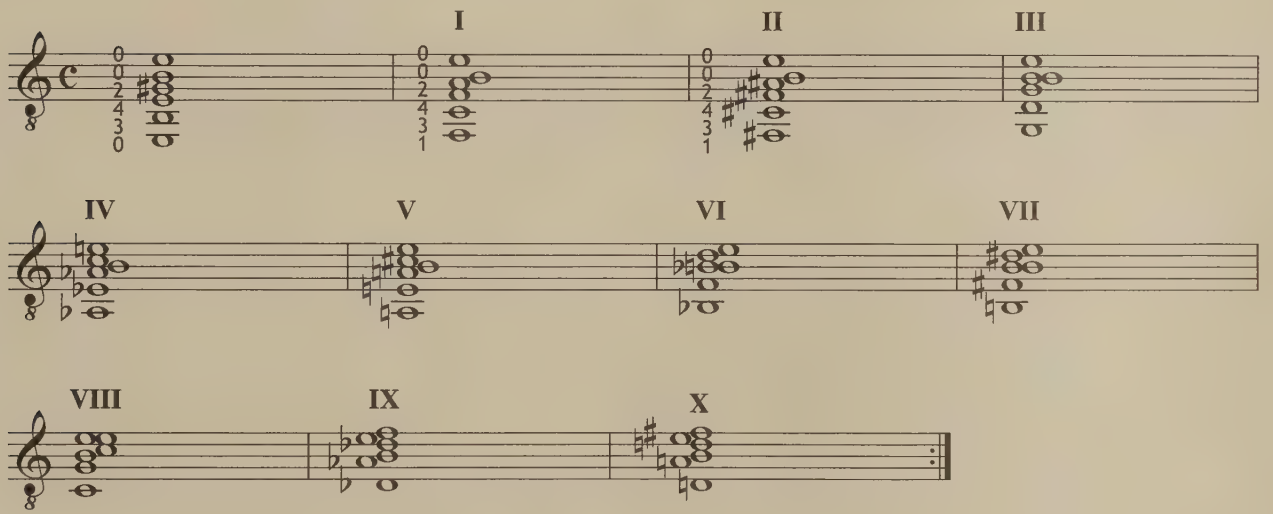
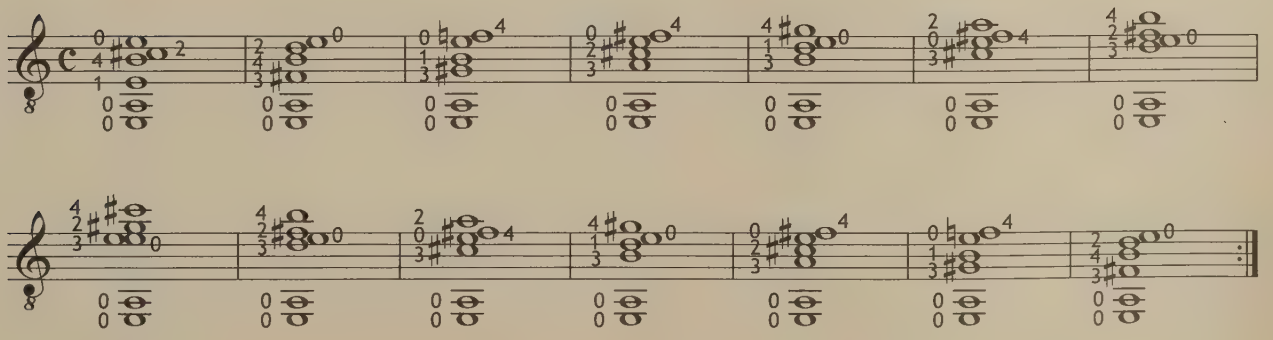
Chromatic Scale of Thirds With and Without Open Strings

Chromatic Shifting of an E Major Chord with Open Strings

Six Part Chord Patterns

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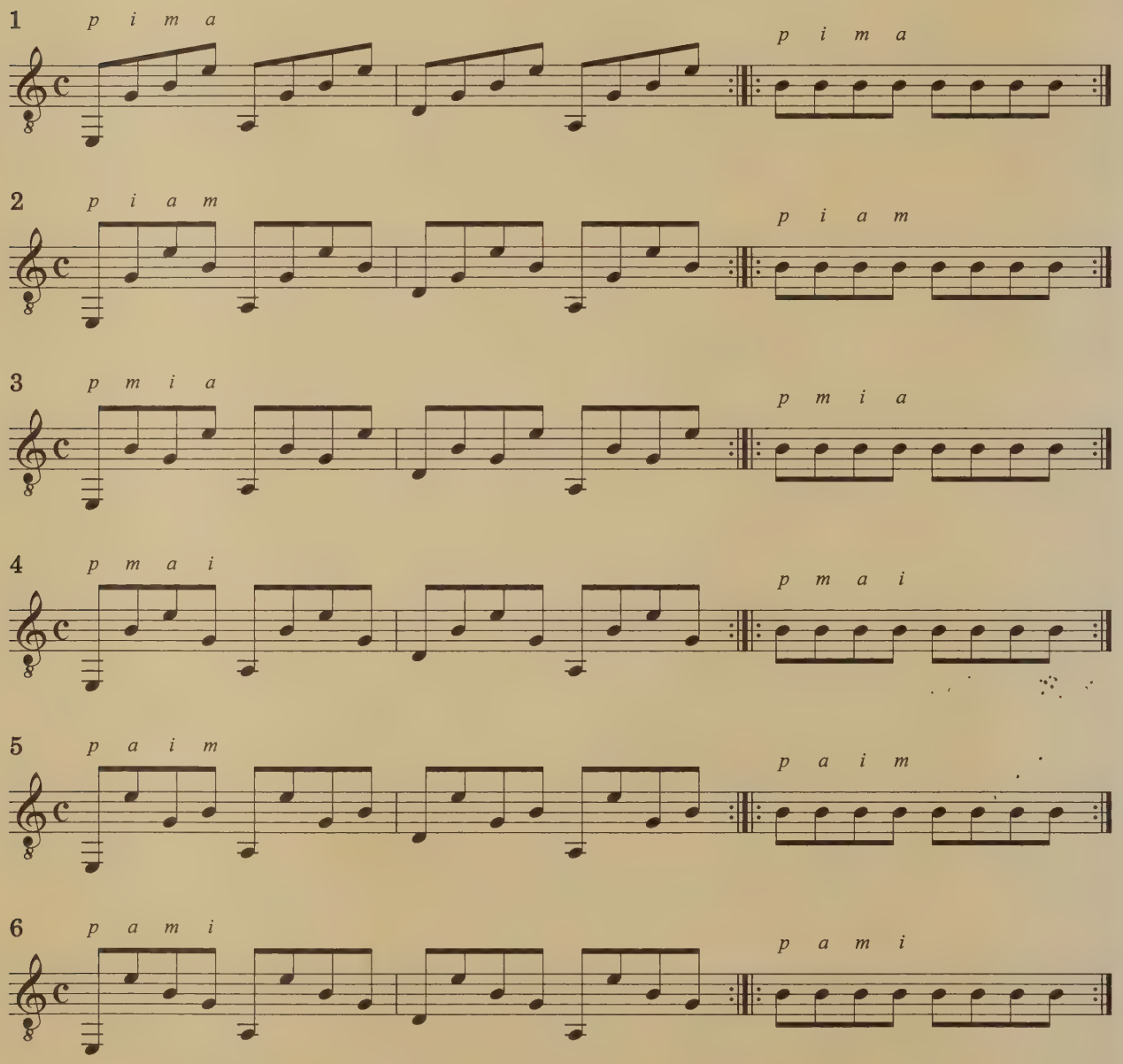
Arpeggio Practicing Units

The individual exercises are grouped into thematic units numbered from A1 to A23.

A1 The 6 Basic Arpeggios

There are certain arpeggio patterns that virtually appear in the totality of all guitar repertoire and which form the foundation of all arpeggios. They guarantee balanced, muscular training of all the stroking fingers of the right hand (with the exception of the pinky, see "VI. Flamenco Techniques," p. 169). They are made up of four notes and are played with the following sequence of fingers: thumb, index, middle and ring fingers.



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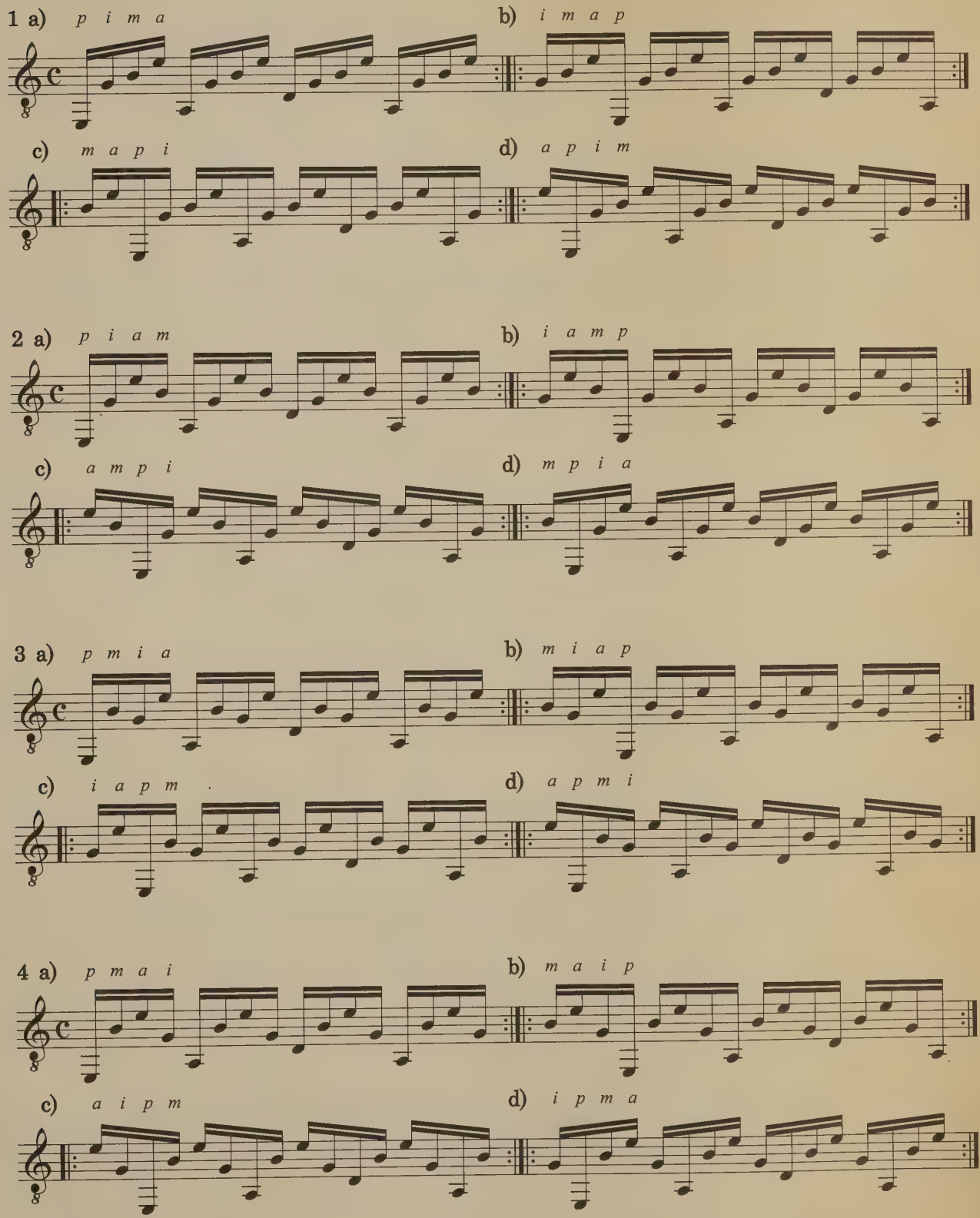
A2 6 Basic Arpeggios Expanded to 24

Keeping the order of notes consistent in basic arpeggios, one can create three additional patterns in which each finger, through the shifting of the notes, is permitted to begin the arpeggio. Although all 4 patterns have the same order of notes, they are not identical based on the different notes that each arpeggio begins with. The connecting mechanisms of our brain perceive each of these patterns as unique and independent.



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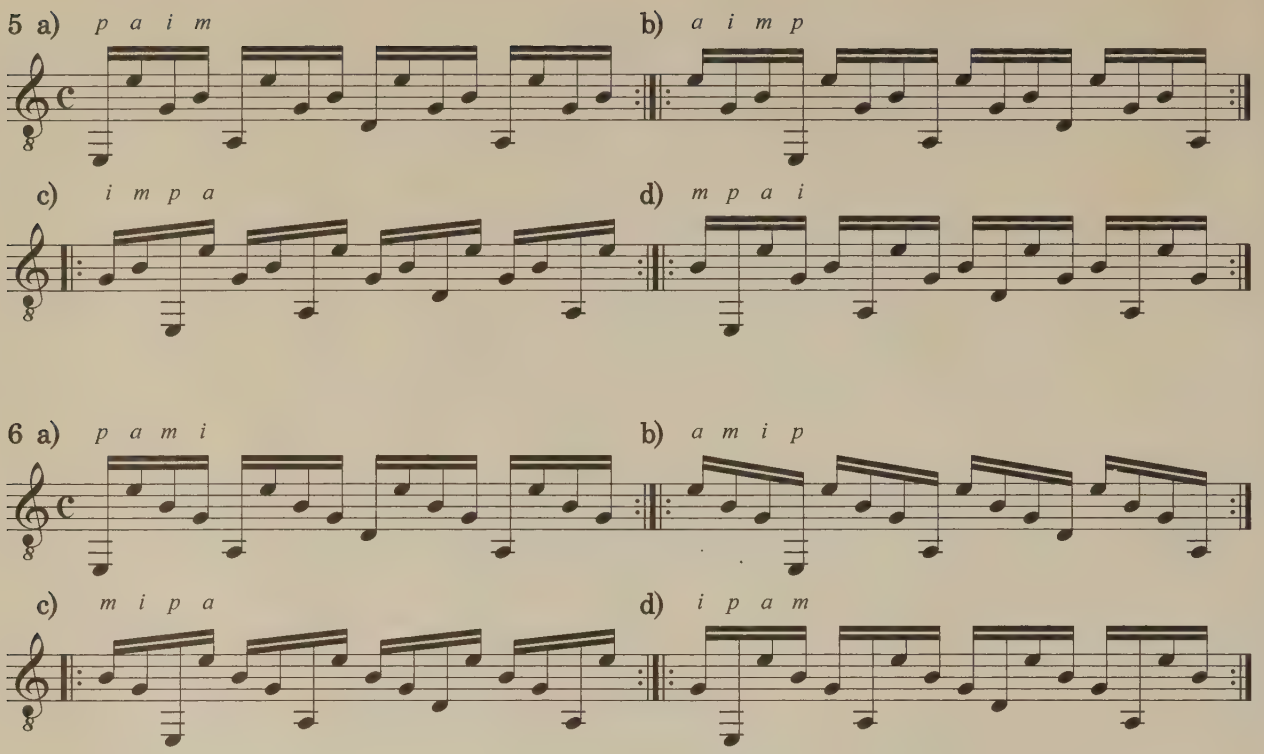
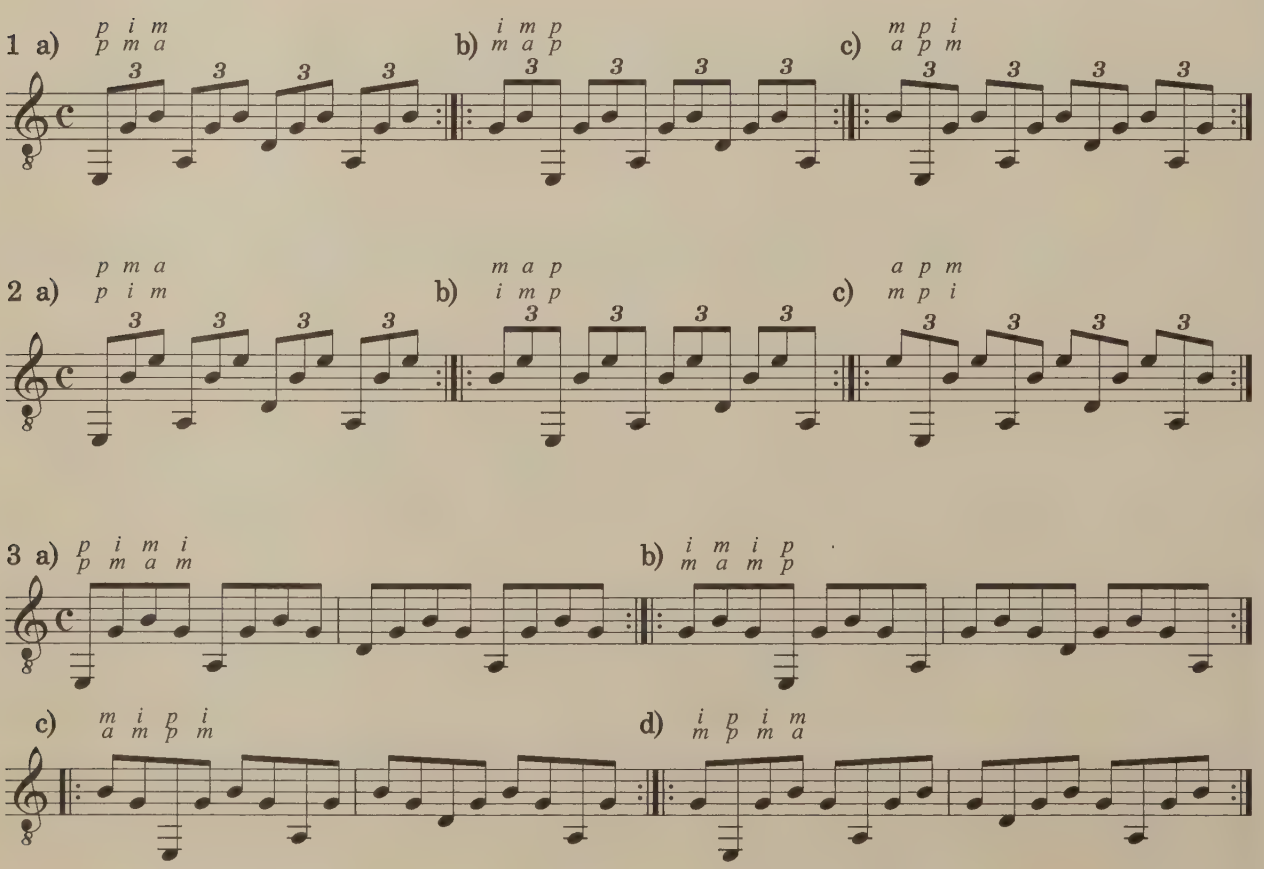


A3 Arpeggios with p-m-i, p-m-a, p-i-a

Arpeggios employing your thumb and 2 fingers in groups of three and four notes rank among the most common arpeggio patterns. In exercises 17 and 18, please observe **the changes in the string and finger assignments**! By changing from the normal string/finger assignments to an uncomfortable one, for example with **i** on the 1st and **m** on the 2nd string, you can intensify the work on your RH finger accuracy. **Don't forget to play all the patterns on a single string as well!**



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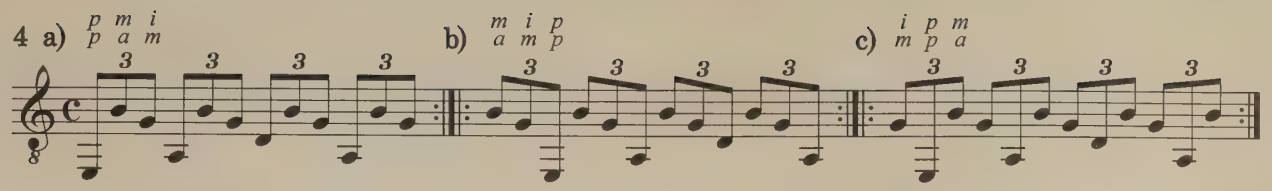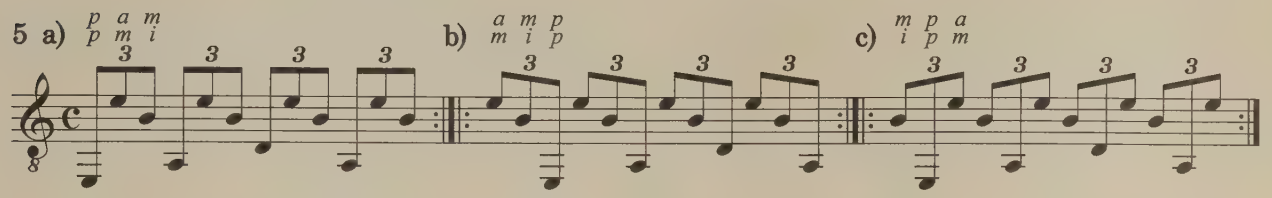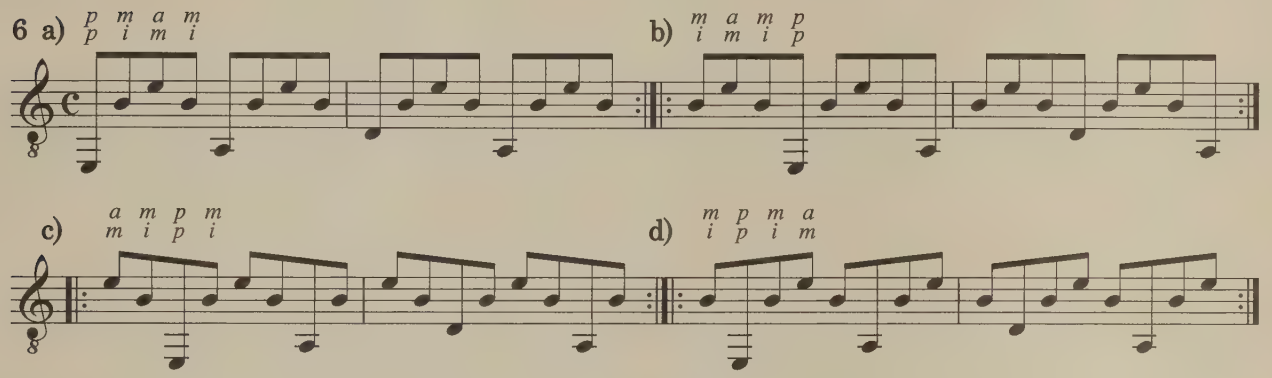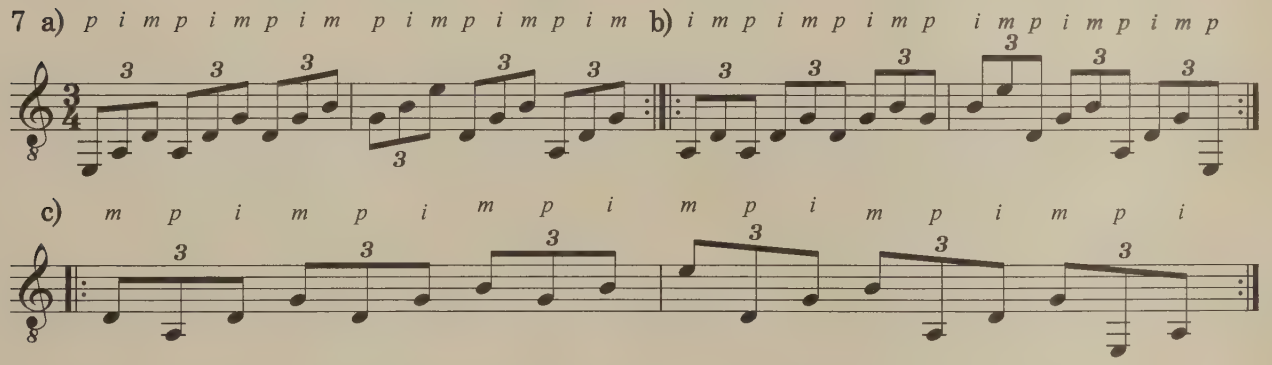
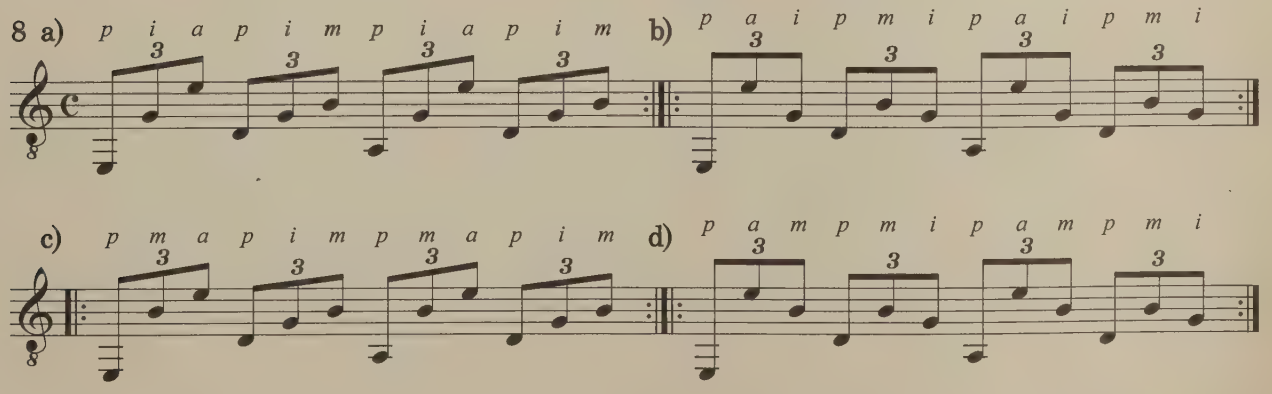

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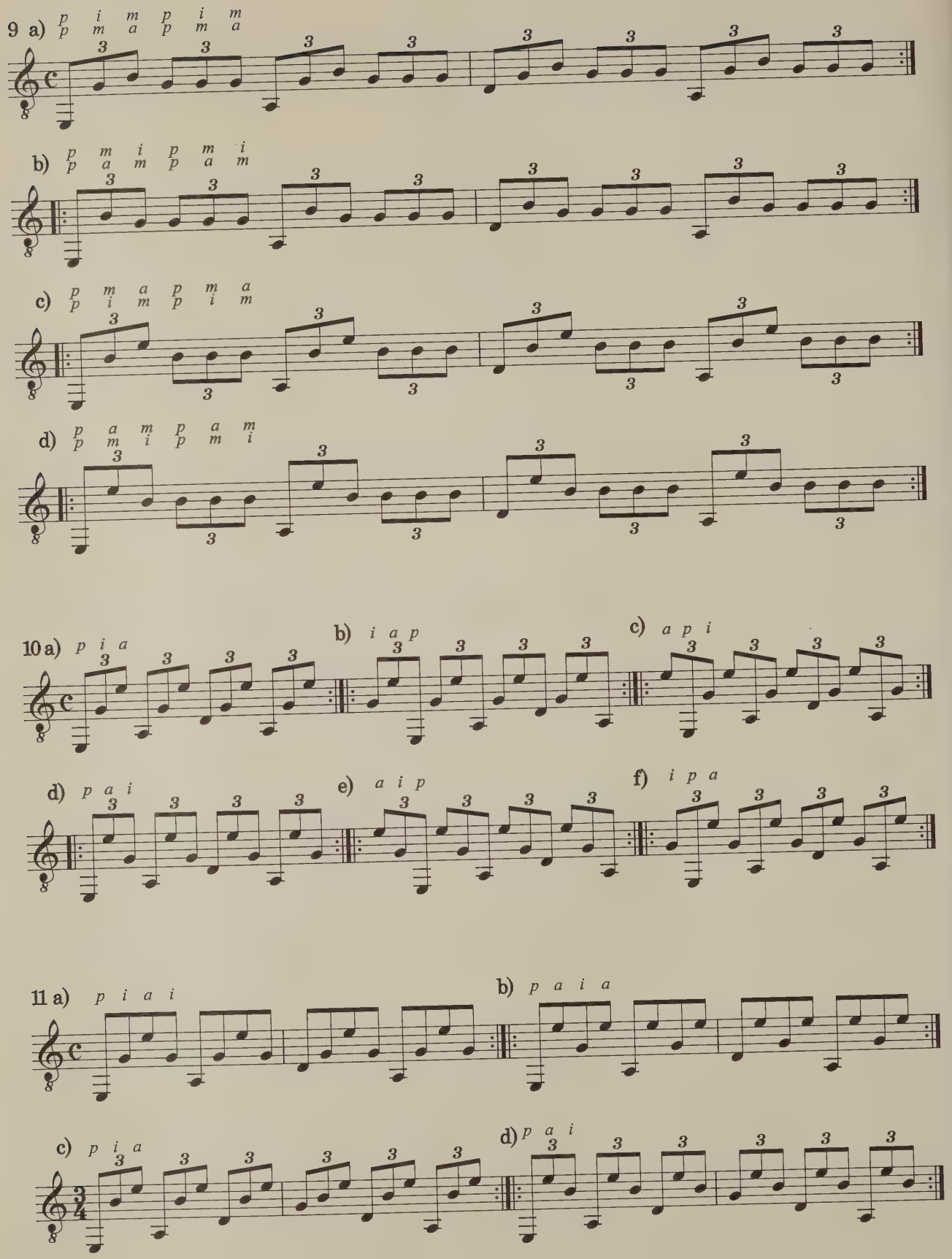

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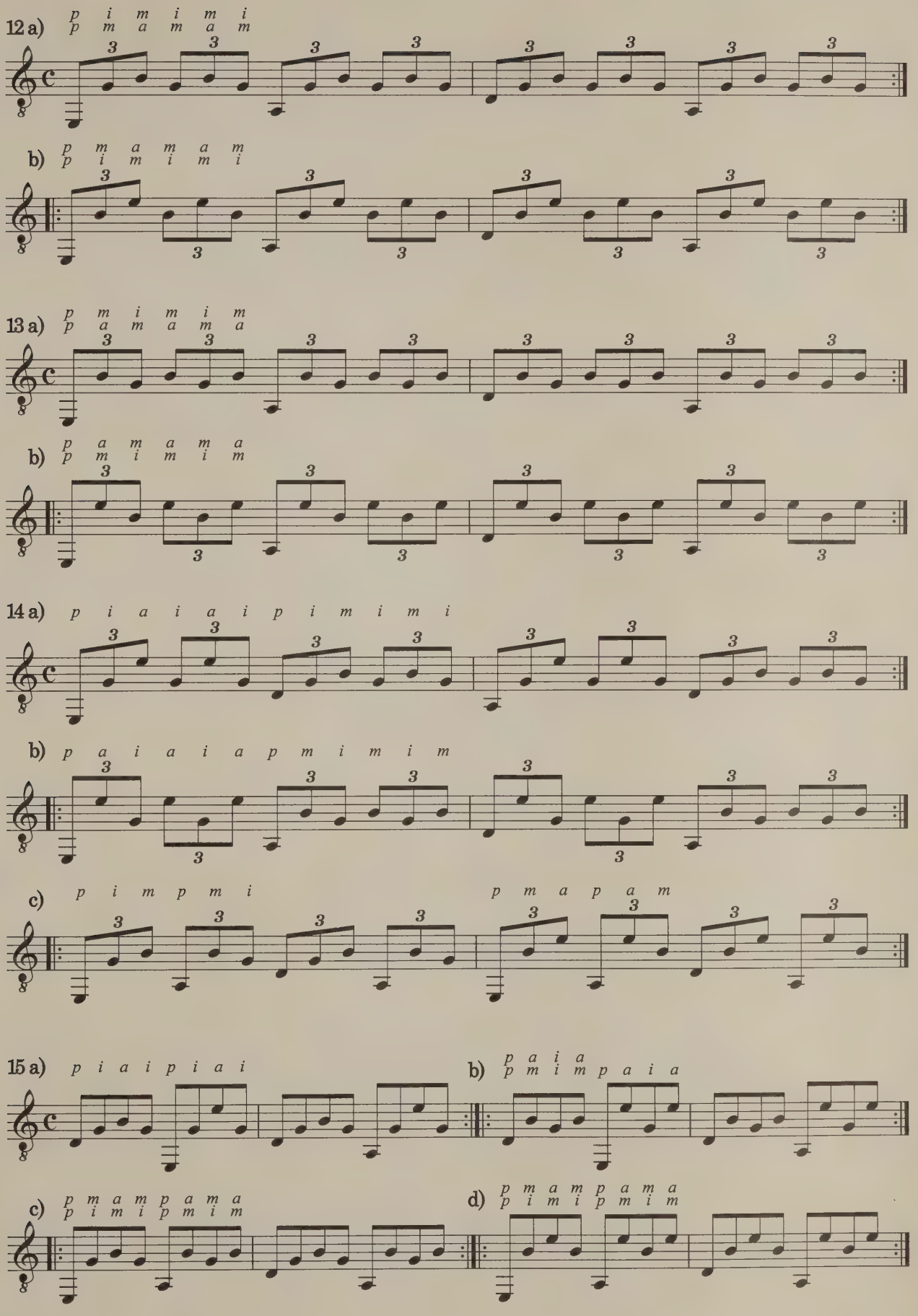
12 a)
p i m i m i
p m a m a m
b)
p m a m a m
p i m i m i
13 a)
p m i m i m
p a m a m a
b)
p a m a m a
p m i m i m
14 a)
p i a i a i p i m i m i
b)
p a i a i a p m i m i m
c)
p i m p m i
p m a p a m
15 a)
p i a i p i a i
b)
p a i a
p m i m p a i a
c)
p m a m p a m a
p i m i p m i m
d)
p m a m p a m a
p i m i p m i m

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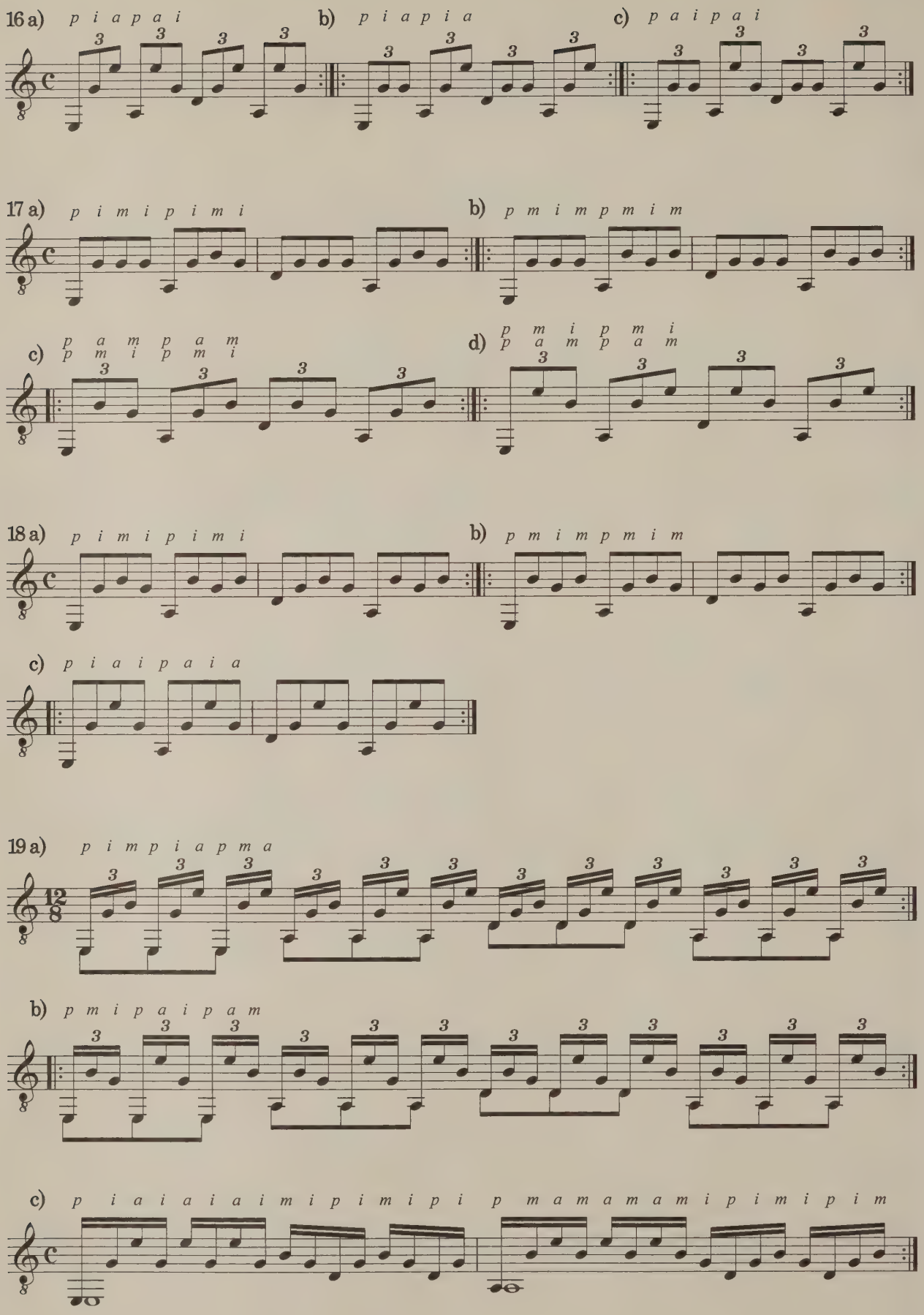
16 a) p i a p a i
b) p i a p i a
c) p a i p a i
17 a) p i m i p i m i
b) p m i m p m i m
c) p a m p a m
p m i p m i
d) p m i p m i
p a m p a m
18 a) p i m i p i m i
b) p m i m p m i m
c) p i a i p a i a
19 a) p i m p i a p m a
b) p m i p a i p a m
c) p i a i a i a i m i p i m i p i p m a m a m a m i p i m i p i m

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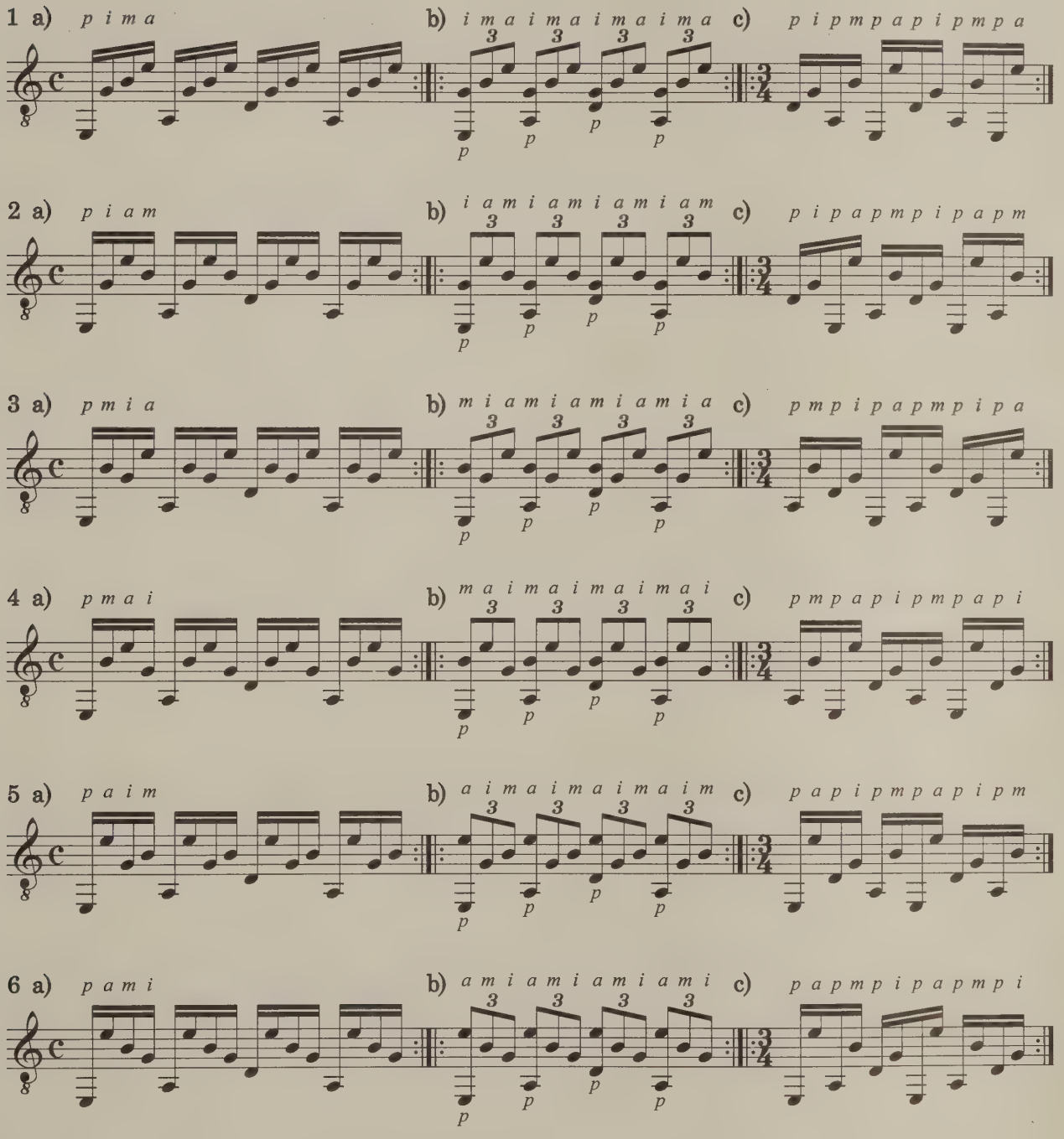
A4 Alternating Various Arpeggio Patterns

Arpeggio exercises with different tension in the RH are very effective. In basic arpeggios, the right hand is in a normal state of tension; performing the two-part variation however, your RH switches to a distinctly higher state of tension. Watch out that your RH doesn't start to "hop" or "jump." The non-simultaneous attack of **p-i**, **p-m** and **p-a** can then be executed with less tension.


1 a) p i m a
b) i m a i m a i m a i m a
c) p i p m p a p i p m p a
2 a) p i a m
b) i a m i a m i a m i a m
c) p i p a p m p i p a p m
3 a) p m i a
b) m i a m i a m i a m i a
c) p m p i p a p m p i p a
4 a) p m a i
b) m a i m a i m a i m a i
c) p m p a p i p m p a p i
5 a) p a i m
b) a i m a i m a i m a i m
c) p a p i p m p a p i p m
6 a) p a m i
b) a m i a m i a m i a m i
c) p a p m p i p a p m p i

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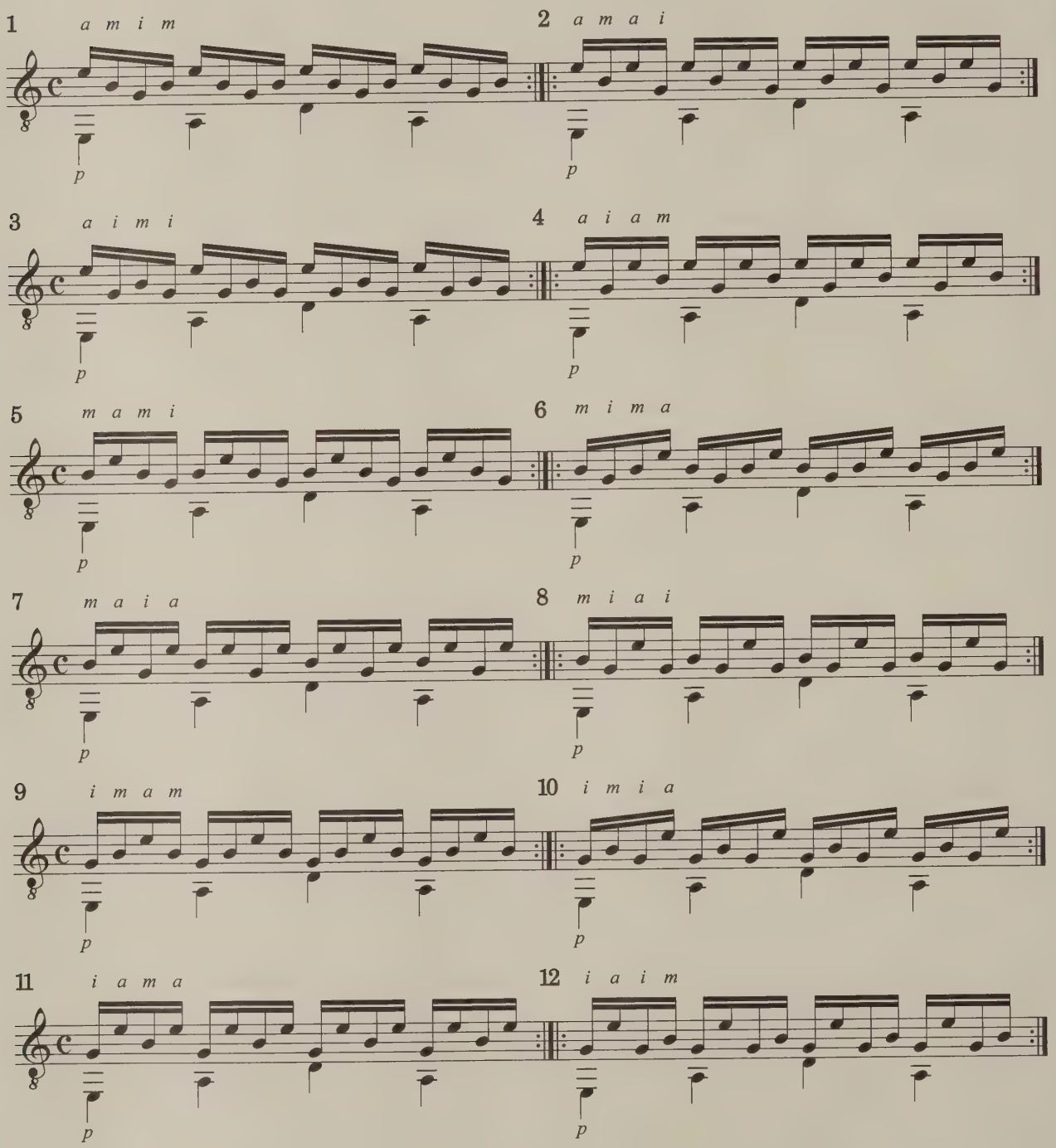
TIP A5 12 Basic Arpeggios with Simultaneous Thumb Attacks

With two-part arpeggio patterns, you have to slightly increase the tension of the right hand so that the wrist remains calm and still. The 3 variations are intense and especially effective exercises.



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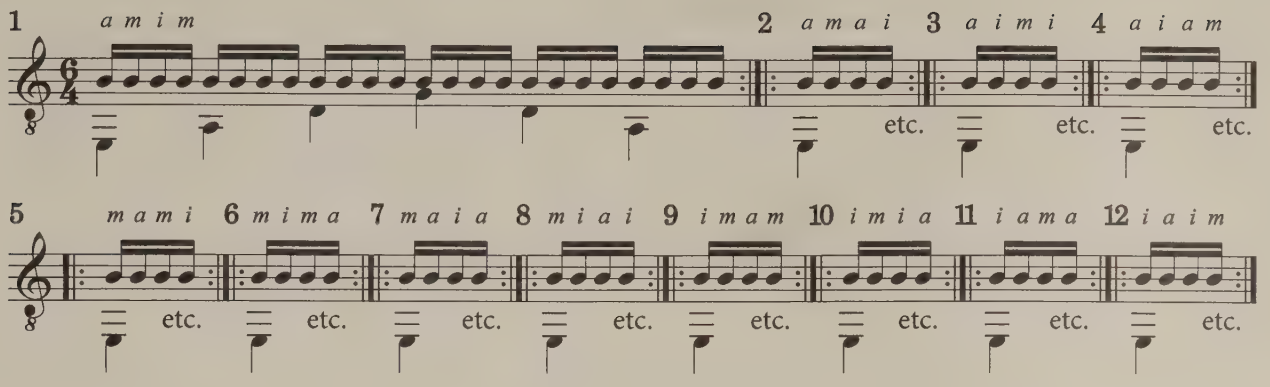
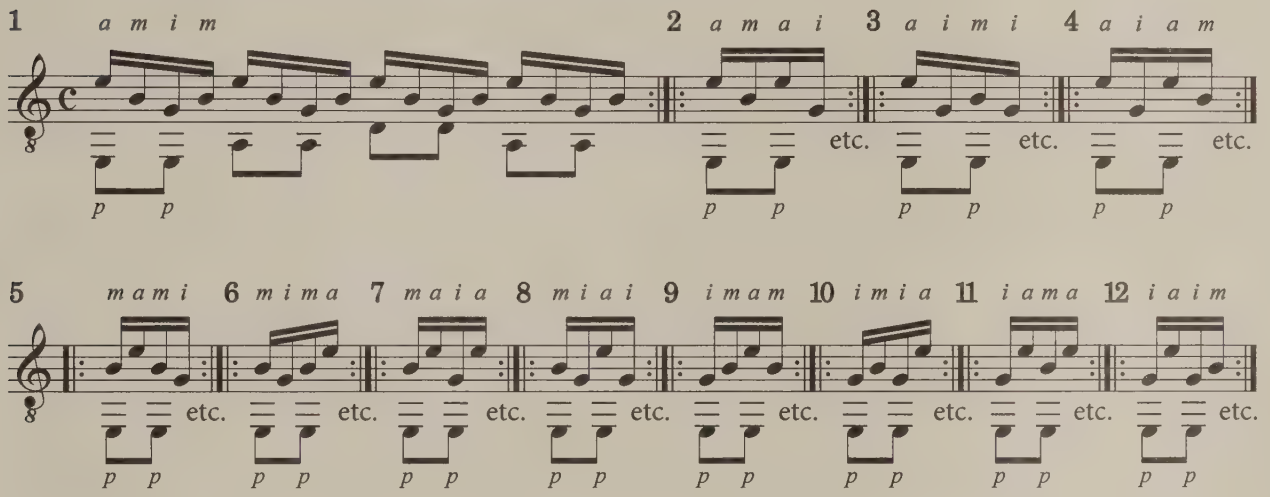
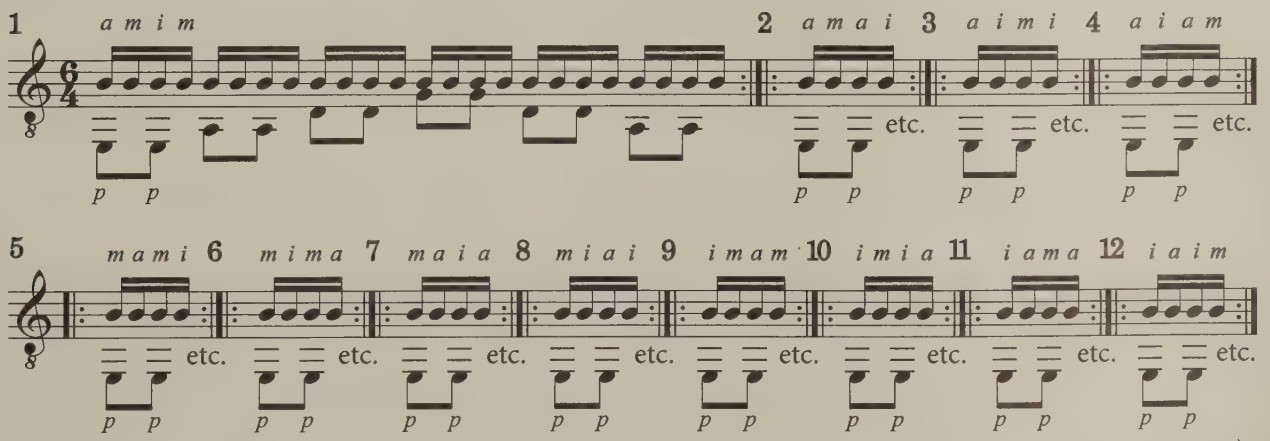
1. Variation on Two Strings

2. Variation with Eighth Note Bass Notes

3. Variation on Two Strings with Eighth Note Bass Notes



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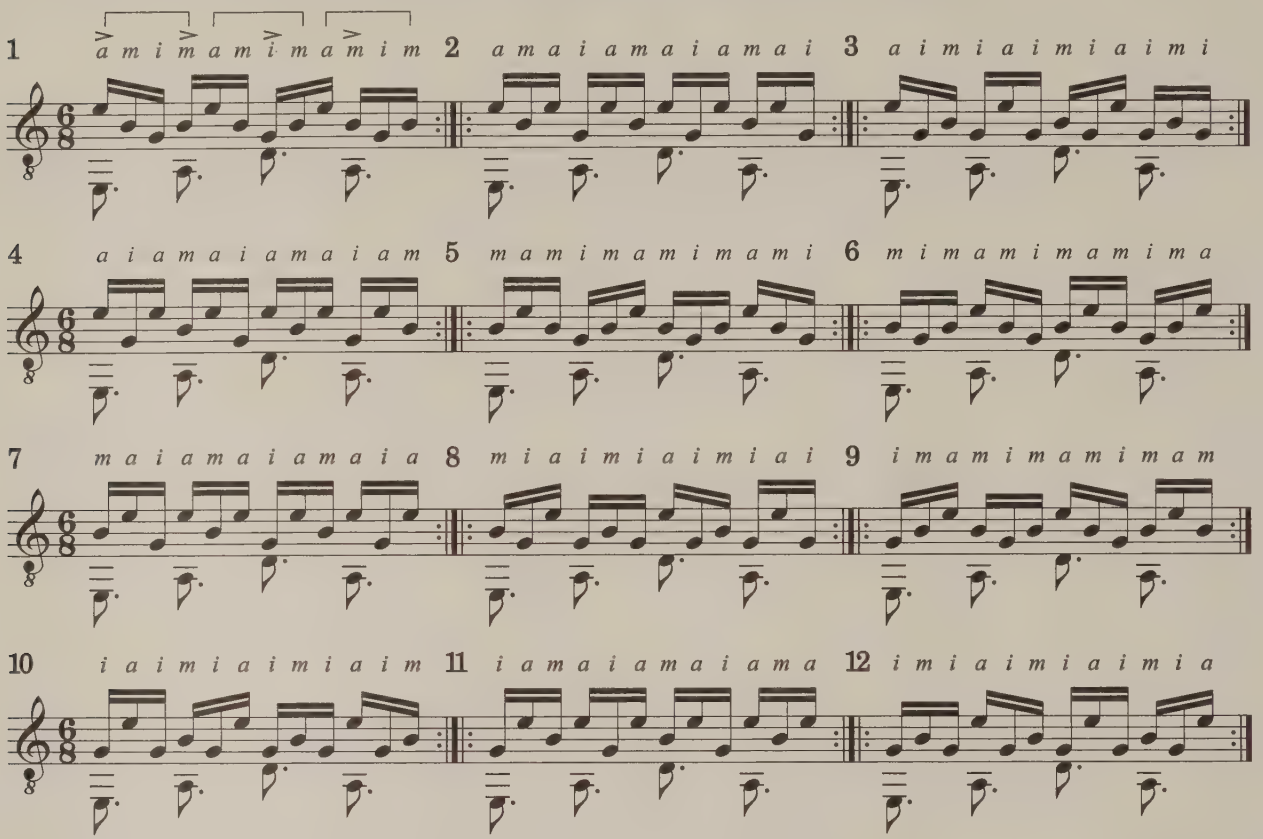
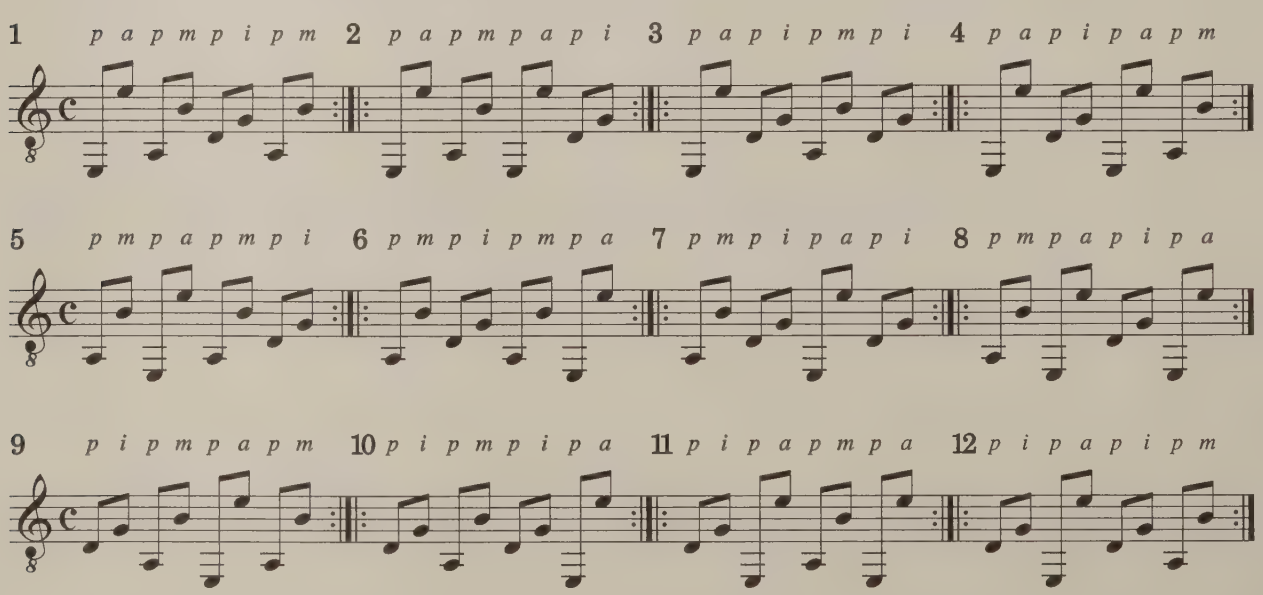
TIP A6 12 Basic Arpeggios with Polyrhythms

In this variation, the fingers play four 16th note groups while the thumb alternately plays a dotted eighth note. A 3 against 4 rhythm emerges. Very effective!


1 a m i m a m i m a m i m
2 a m a i a m a i a m a i
3 a i m i a i m i a i m i
4 a i a m a i a m a i a m
5 m a m i m a m i m a m i
6 m i m a m i m a m i m a
7 m a i a m a i a m a i a
8 m i a i m i a i m i a i
9 i m a m i m a m i m a m
10 i a i m i a i m i a i m
11 i a m a i a m a i a m a
12 i m i a i m i a i m i a

A7 Arpeggios with p-i, p-m and p-a

Non-simultaneous attacks correspond to "fingerpicking" on a steel string guitar. It's quite easy to do because of the minimal tension in the right hand. In order to play as fast as possible, the string assignment of the thumb is always the same.

1 p a p m p i p m
2 p a p m p a p i
3 p a p i p m p i
4 p a p i p a p m
5 p m p a p m p i
6 p m p i p m p a
7 p m p i p a p i
8 p m p a p i p a
9 p i p m p a p m
10 p i p m p i p a
11 p i p a p m p a
12 p i p a p i p m

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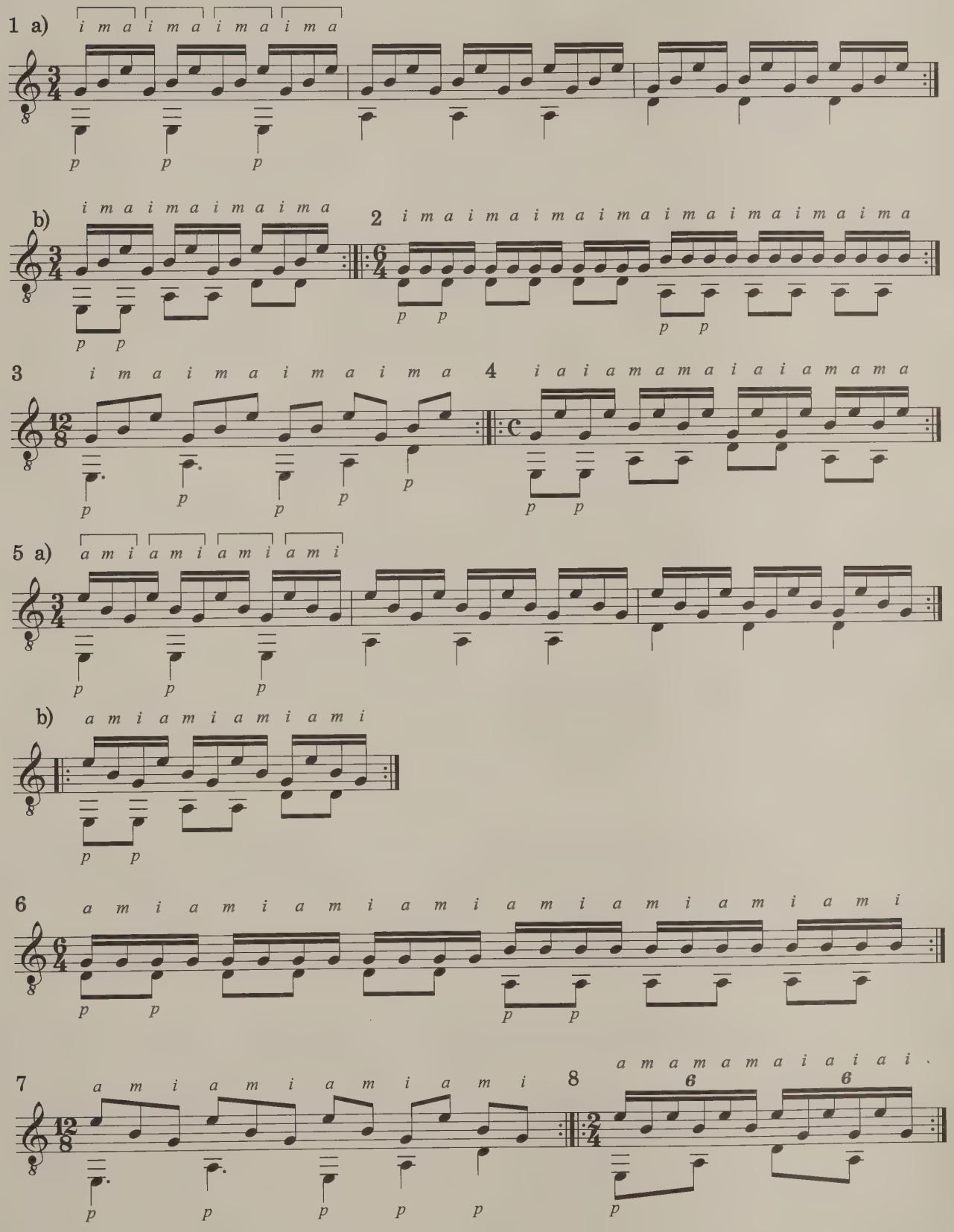
A8 Important Two-Part Arpeggios

Here you'll find the three note arpeggio pattern **a-m-i** and **i-m-a** with a simultaneous thumb stroke on every full beat (accents emerge in a 3 against 4 rhythm), followed by two-part alternating exercises with **a-i**, **a-m** – to strengthen the ring finger – and **m-i**.


1 a)
i m a i m a i m a i m a
b)
i m a i m a i m a i m a
2
i m a i m a i m a i m a i m a i m a i m a i m a
3
i m a i m a i m a i m a
4
i a i a m a m a i a i a m a m a
5 a)
a m i a m i a m i a m i
b)
a m i a m i a m i a m i
6
a m i a m i a m i a m i a m i a m i a m i a m i a m i
7
a m i a m i a m i a m i
8
a m a m a m a i a i a i

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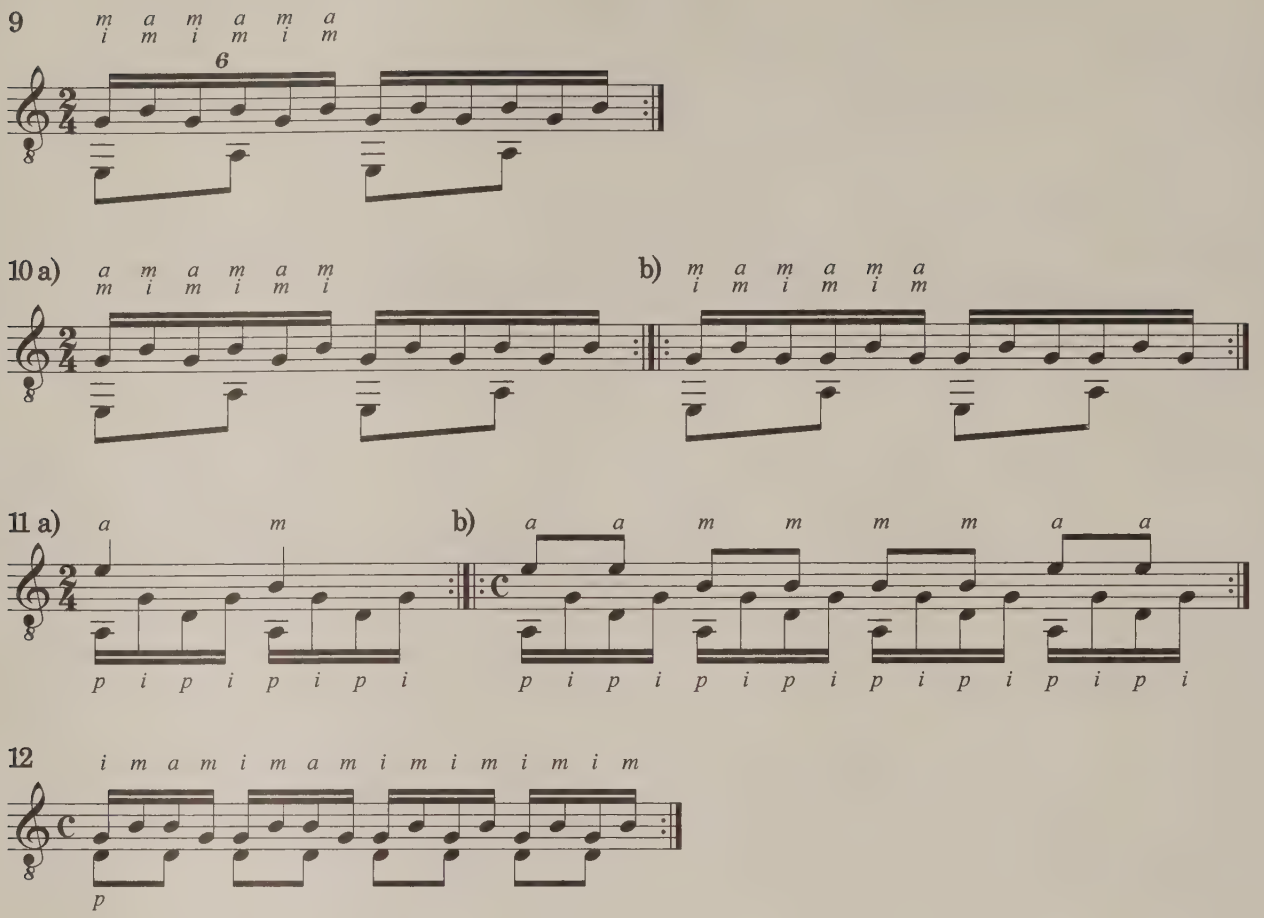
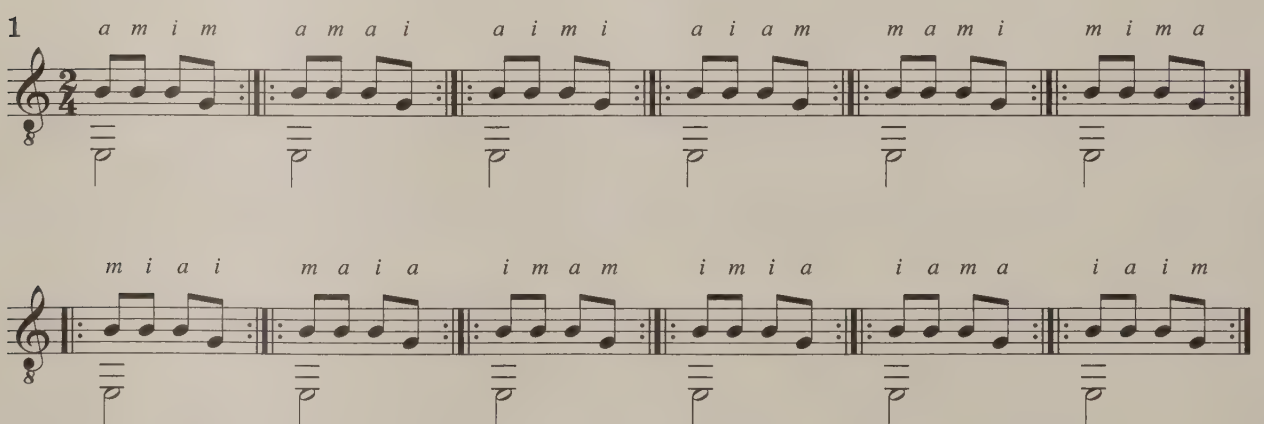


Arpeggio exercise No. 12 is a helpful exercise for Study No. 23 by Napoléon Coste, page 195.

TIP A9 The 12 Basic Arpeggios on Three Strings

Practicing on three strings (without the 1st string) using inconvenient string assignments for the stroking fingers trains your two-part stroke and the accuracy of your right hand. The 6th string can be replaced by the 5th or the 4th one (see also A12, p. 71).



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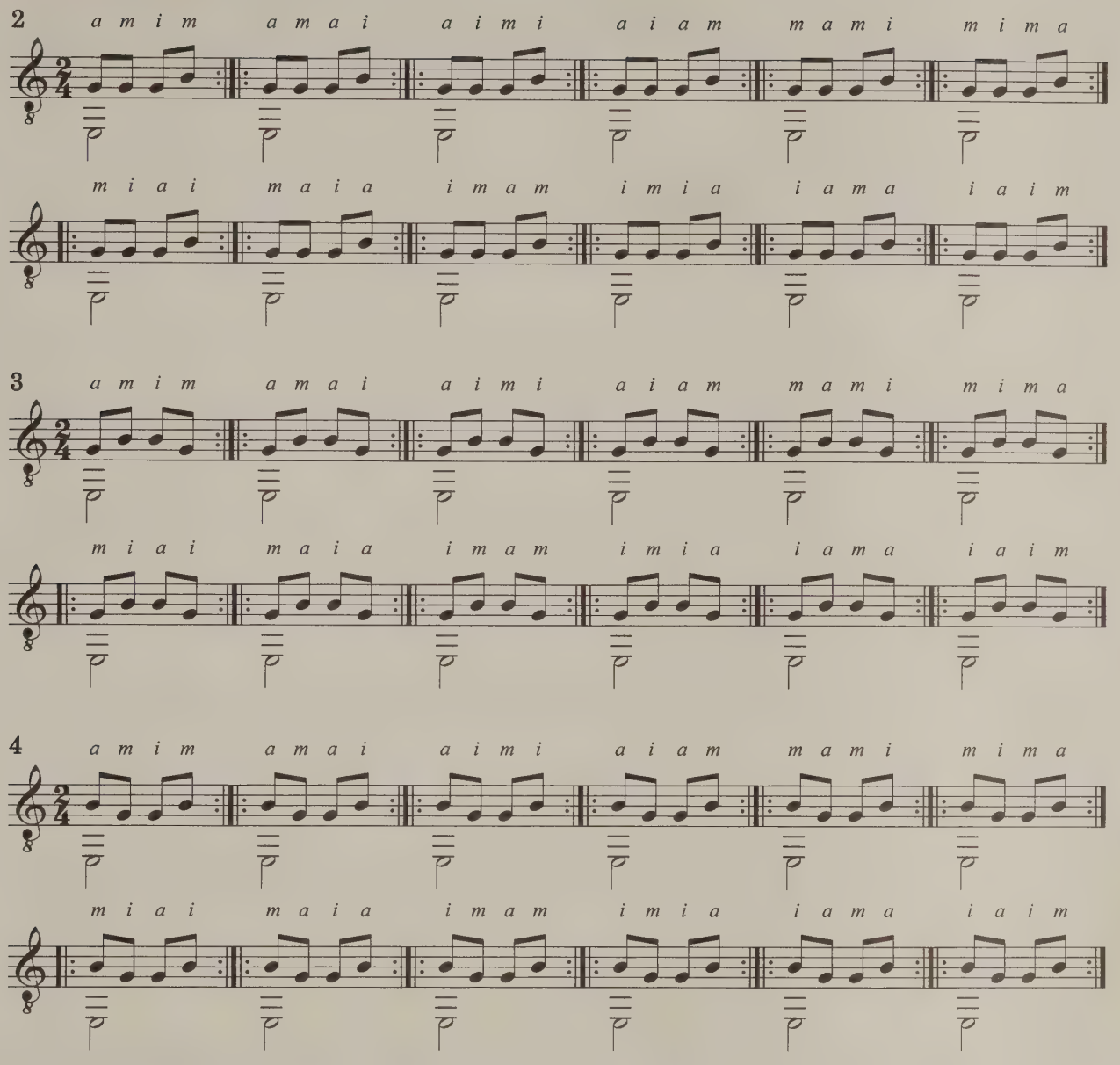
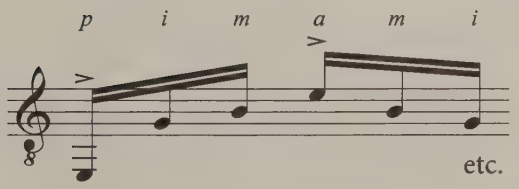
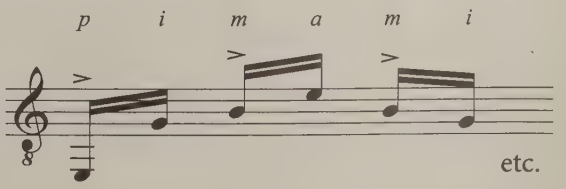

2
a m i m a m a i a i m i a i a m m a m i m i m a
m i a i m a i a i m a m i m i a i a m a i a i m
3
a m i m a m a i a i m i a i a m m a m i m i m a
m i a i m a i a i m a m i m i a i a m a i a i m
4
a m i m a m a i a i m i a i a m m a m i m i m a
m i a i m a i a i m a m i m i a i a m a i a i m

TIP A10 36 Six Note Arpeggios

The most important six note arpeggio pattern **p-i-m-a-m-i**, and all remaining patterns should be practiced with the varied accents shown here. For purposes of clarity, they are separated into three groups. As the strain on the right hand is small, they are excellently suited to practice for an extended length of time, i.e. 45 to 60 minutes.



1. Two accents on the 1st and 4th notes



2. Three accents on the 1st, 3rd and 5th notes

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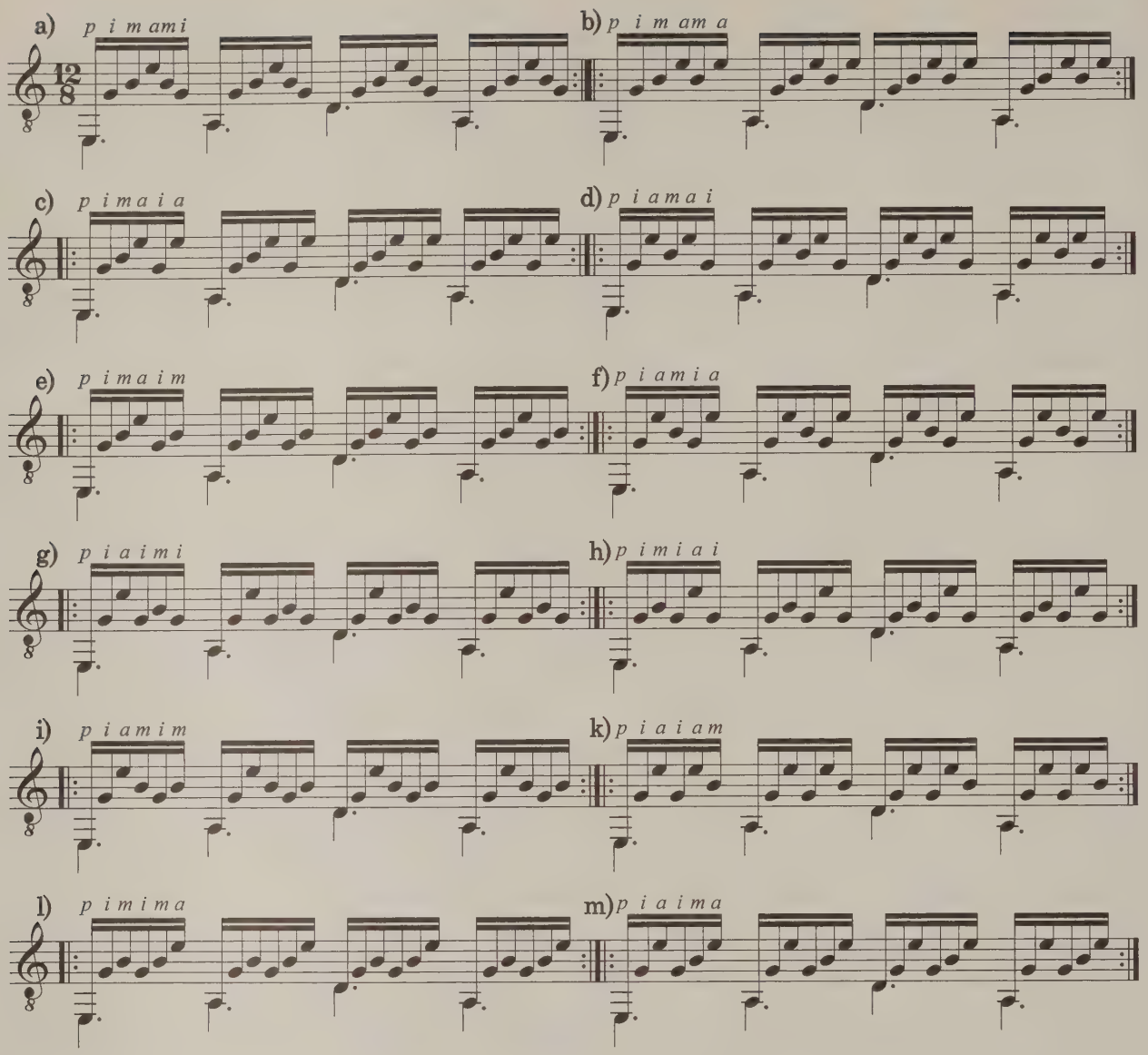
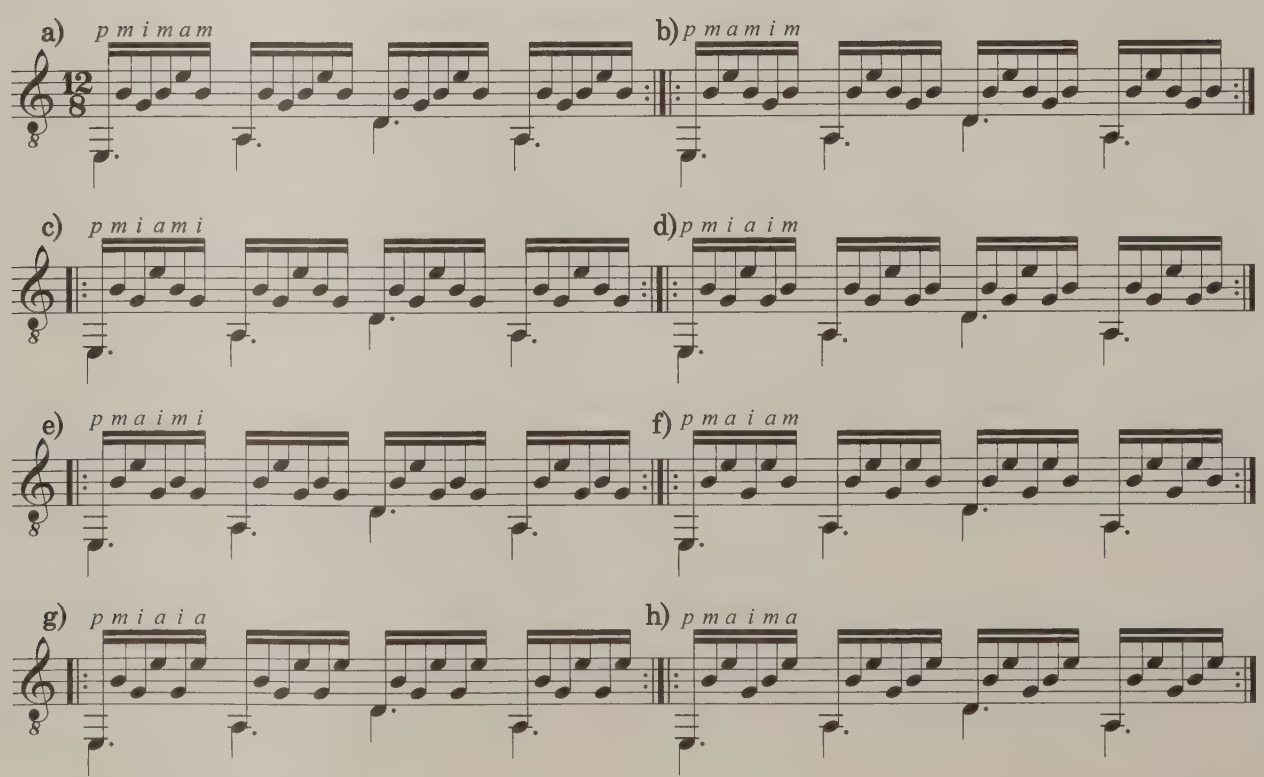
Group 1:



Group 2:

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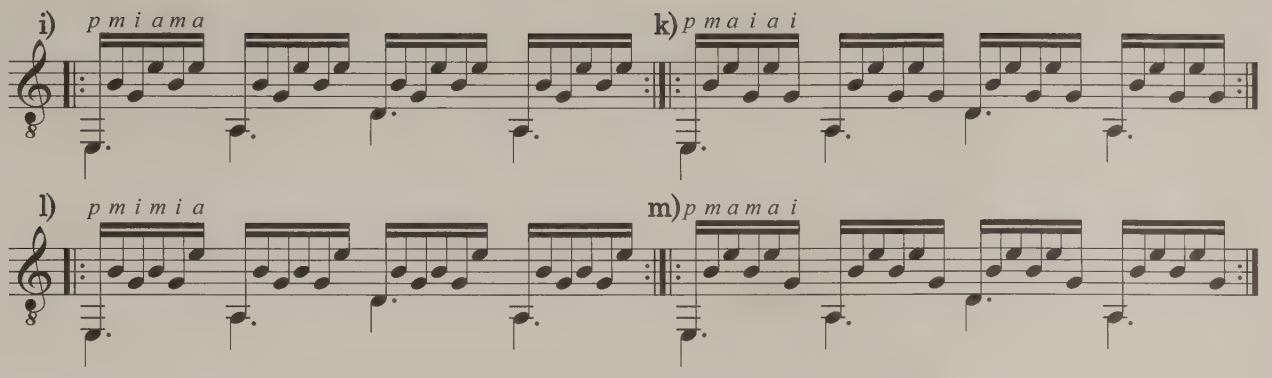
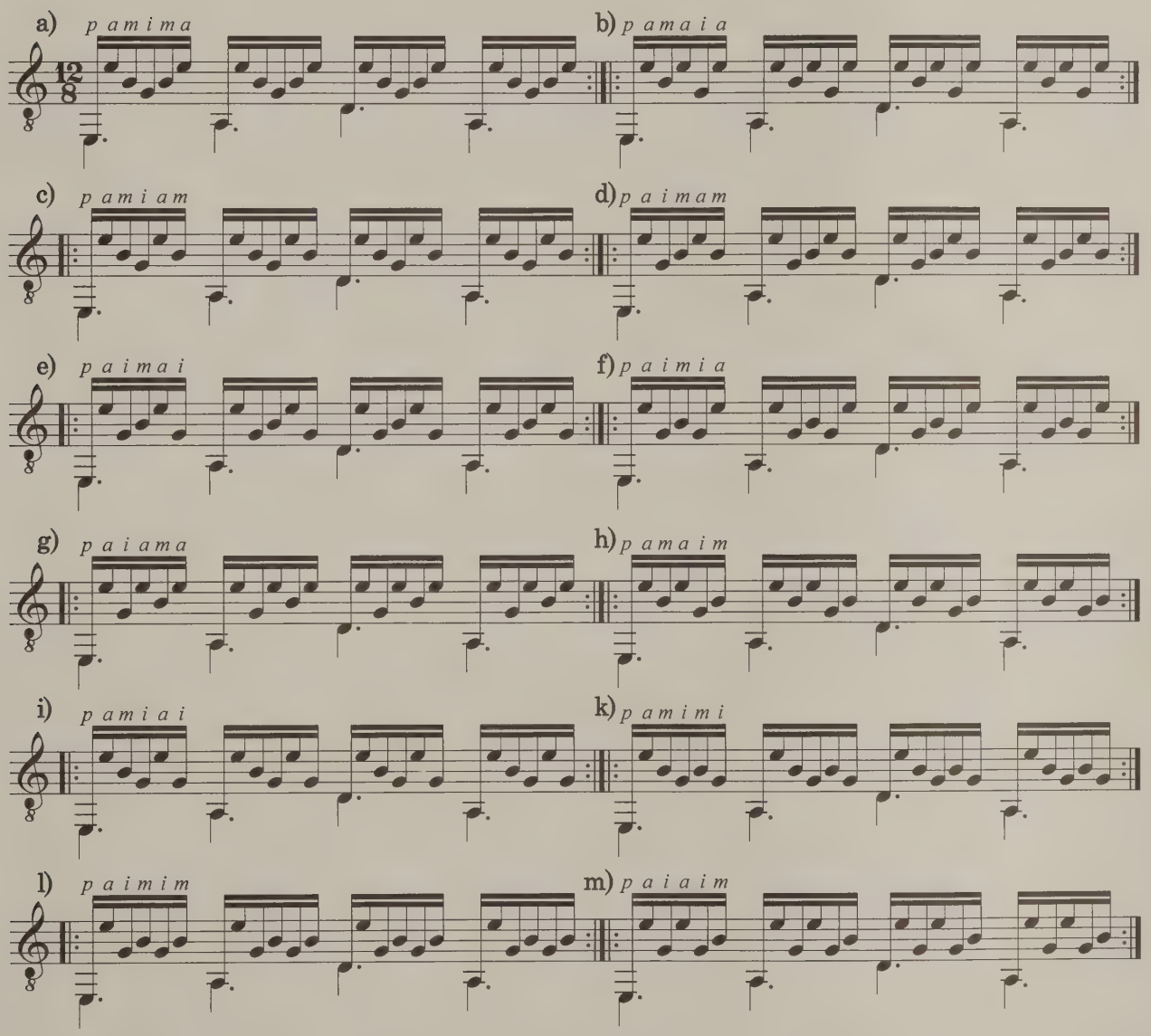
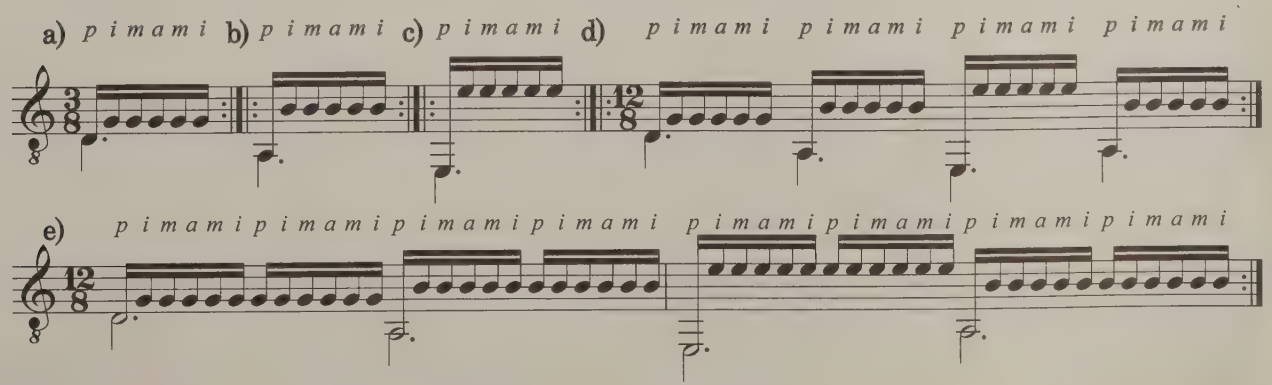

Group 3:

Examples on two strings:

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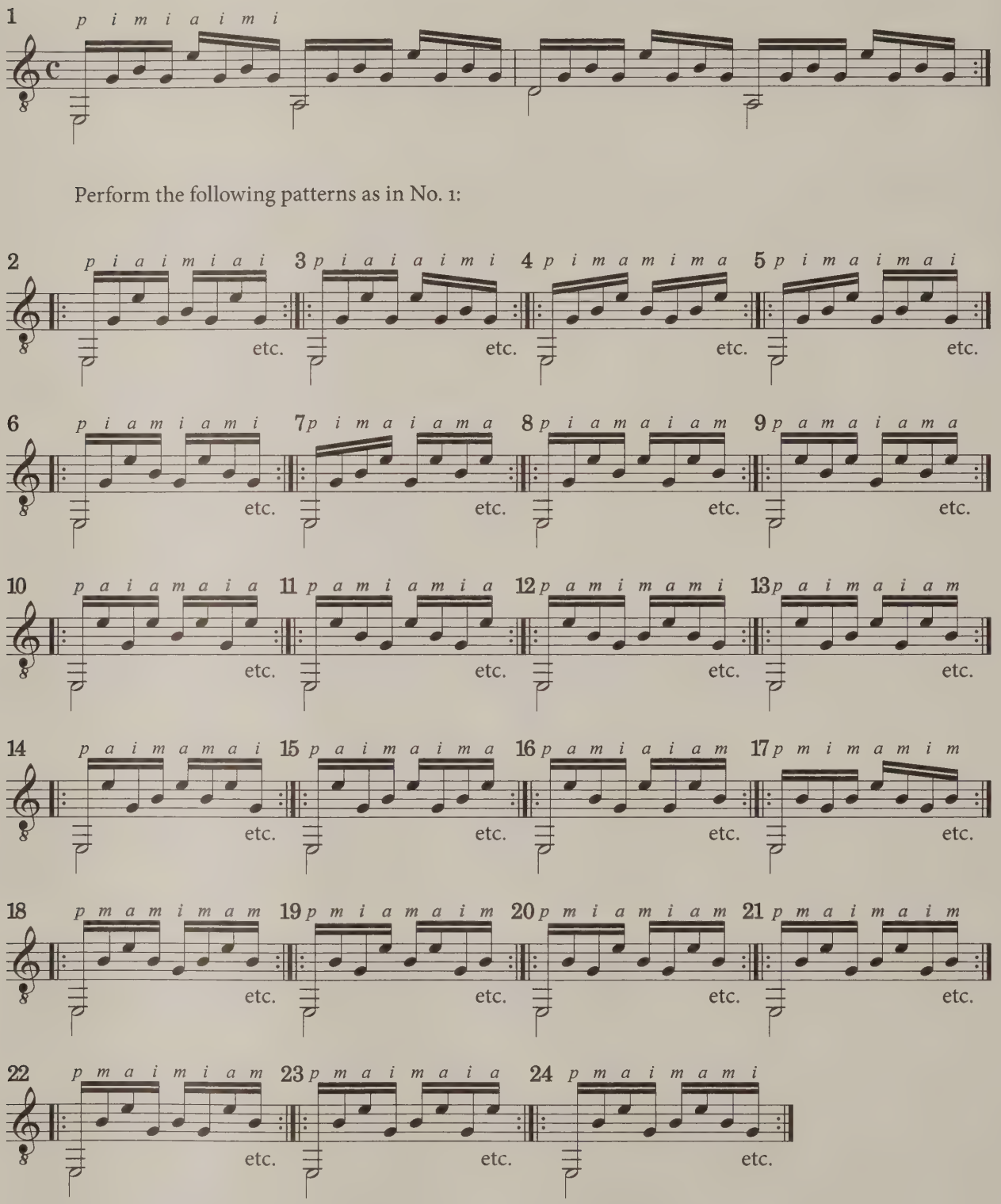
A11 24 Eight Note Arpeggios

Arpeggio patterns with eight notes are very popular with classical guitar composers. Make sure you concentrate on economical movement of the fingers and a calm wrist.


1 p i m i a i m i
2 p i a i m i a i etc.
3 p i a i a i m i etc.
4 p i m a m i m a etc.
5 p i m a i m a i etc.
6 p i a m i a m i etc.
7 p i m a i a m a etc.
8 p i a m a i a m etc.
9 p a m a i a m a etc.
10 p a i a m a i a etc.
11 p a m i a m i a etc.
12 p a m i m a m i etc.
13 p a i m a i a m etc.
14 p a i m a m a i etc.
15 p a i m a i m a etc.
16 p a m i a i a m etc.
17 p m i m a m i m etc.
18 p m a m i m a m etc.
19 p m i a m a i m etc.
20 p m i a m i a m etc.
21 p m a i m a i m etc.
22 p m a i m i a m etc.
23 p m a i m a i a etc.
24 p m a i m a m i etc.

Perform the following patterns as in No. 1:

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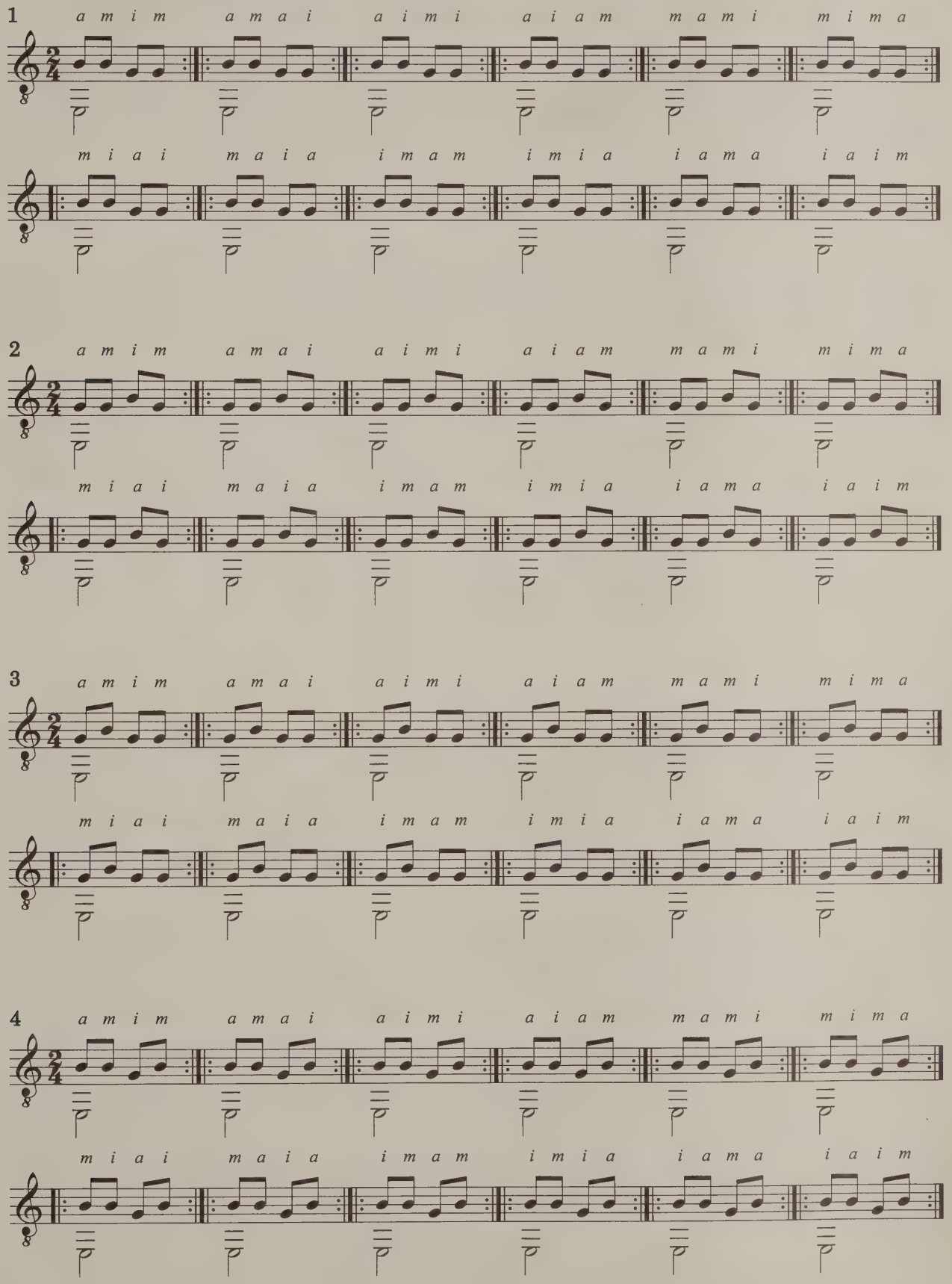
TIP A12 Variations of the 12 Basic Arpeggios on Three Strings

Further two-part arpeggio patterns on three strings with inconvenient string assignments for the stroking fingers as a continuation of A9 (see page 66). Very effective!



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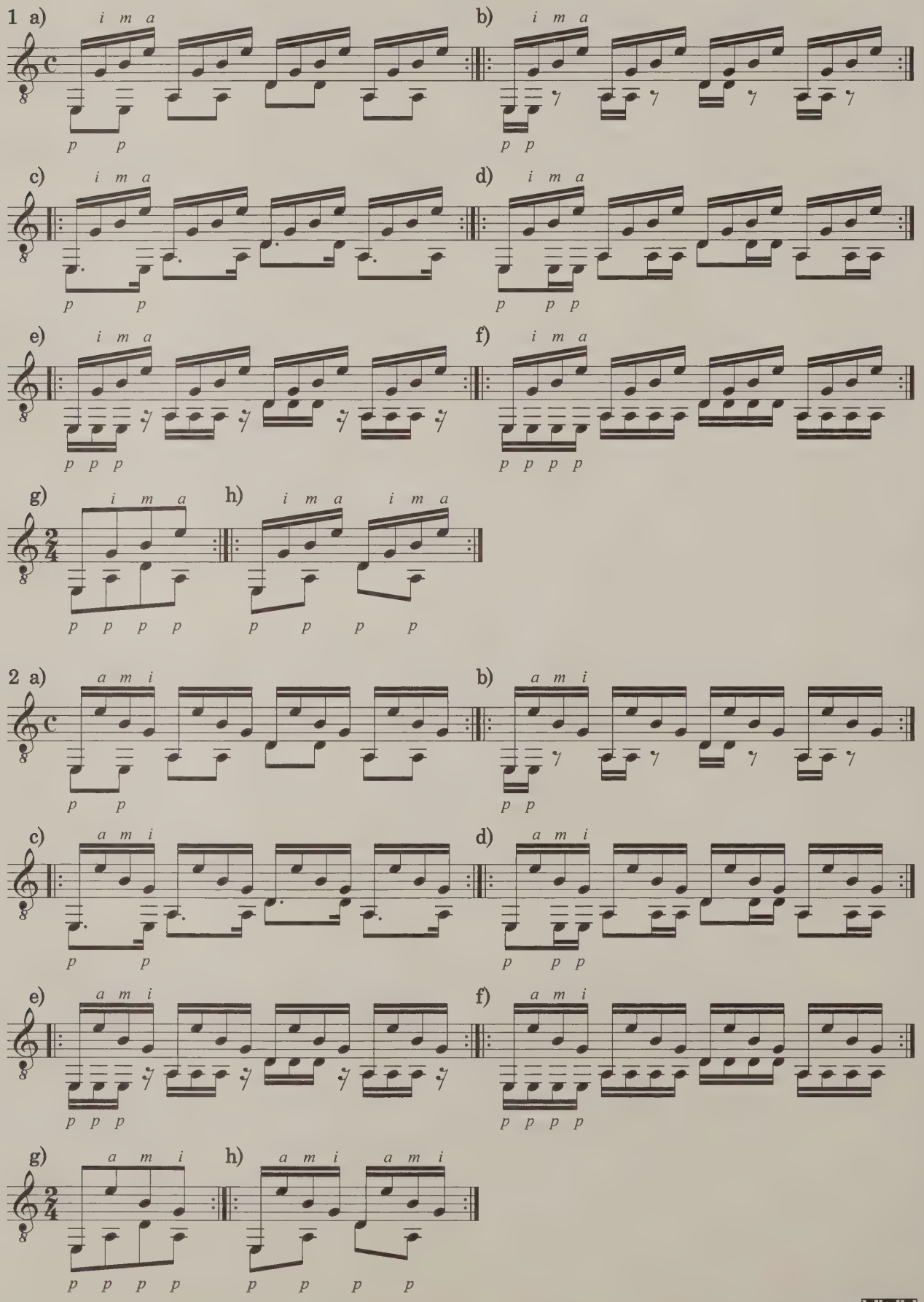
A13 Arpeggios with Thumb Accompaniment

Arpeggio patterns in which the thumb attacks multiple times in succession, thereby "accompanying" the arpeggio, are principally two-part patterns. **They strengthen the RH and help the striking impulse of the fingers to be more precise.** Be mindful of the energy of your RH so that it doesn't get too tense and make sure that your attack does not emanate too much from the wrist.



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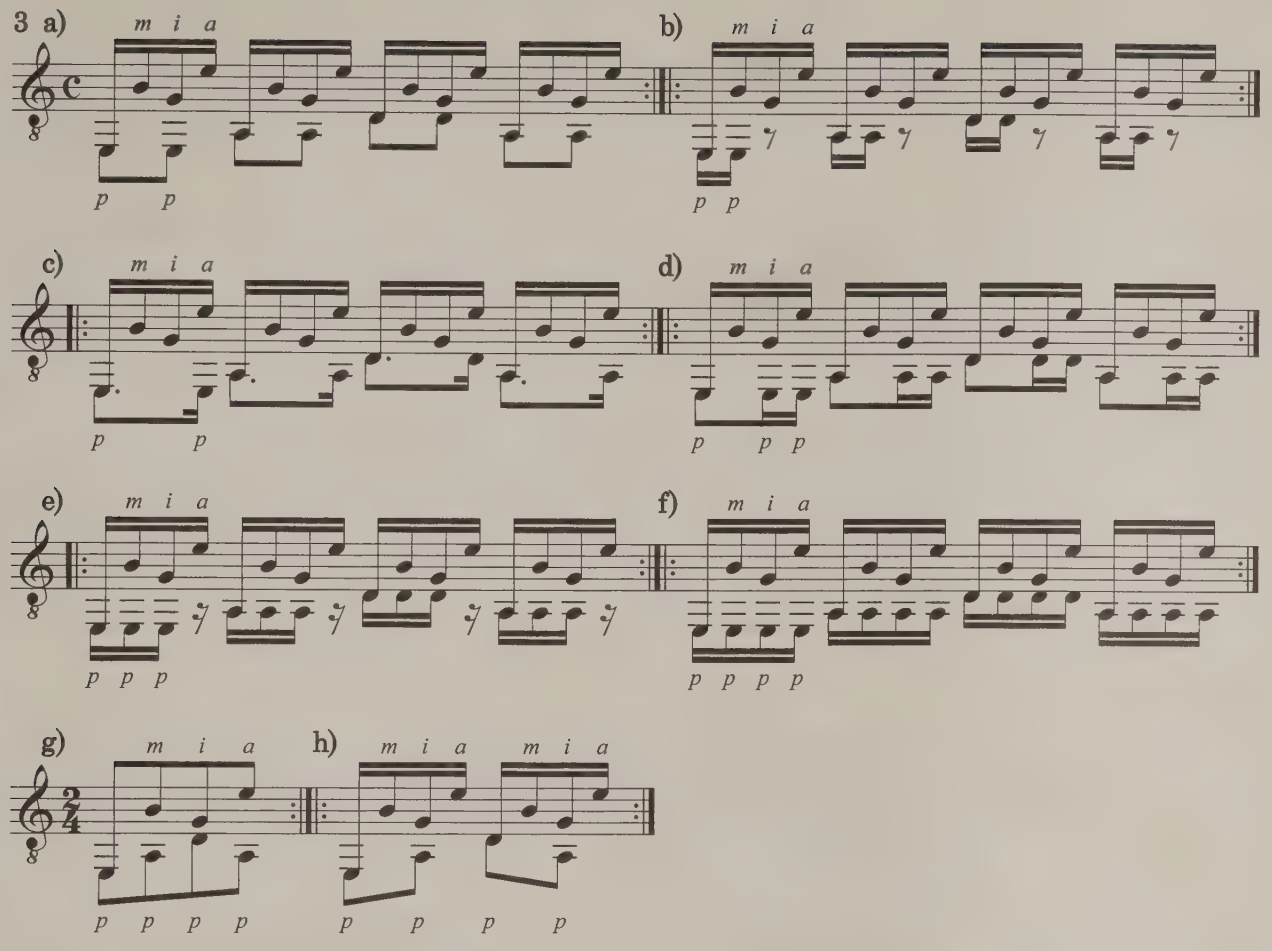
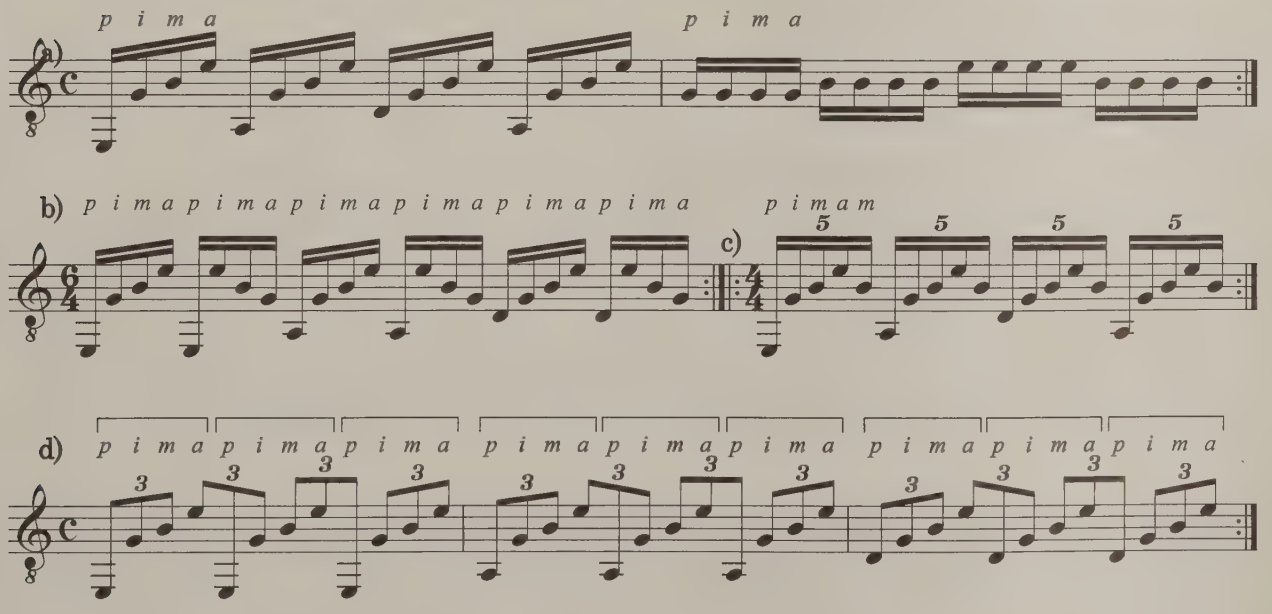


A14 Various Arpeggio Patterns

Based on the 6 and 12 basic arpeggios, here very high demands are made on the right hand which is confronted with the immediate alternation between the various levels of difficulty found in the exercises.

a)
p i m a
p i m a
b)
p i m a p i m a p i m a p i m a p i m a p i m a p i m a
c)
p i m a m
5 5 5 5
d)
p i m a p i m a p i m a p i m a p i m a p i m a p i m a p i m a p i m a p i m a p i m a p i m a
3 3 3 3 3 3 3 3 3 3 3 3

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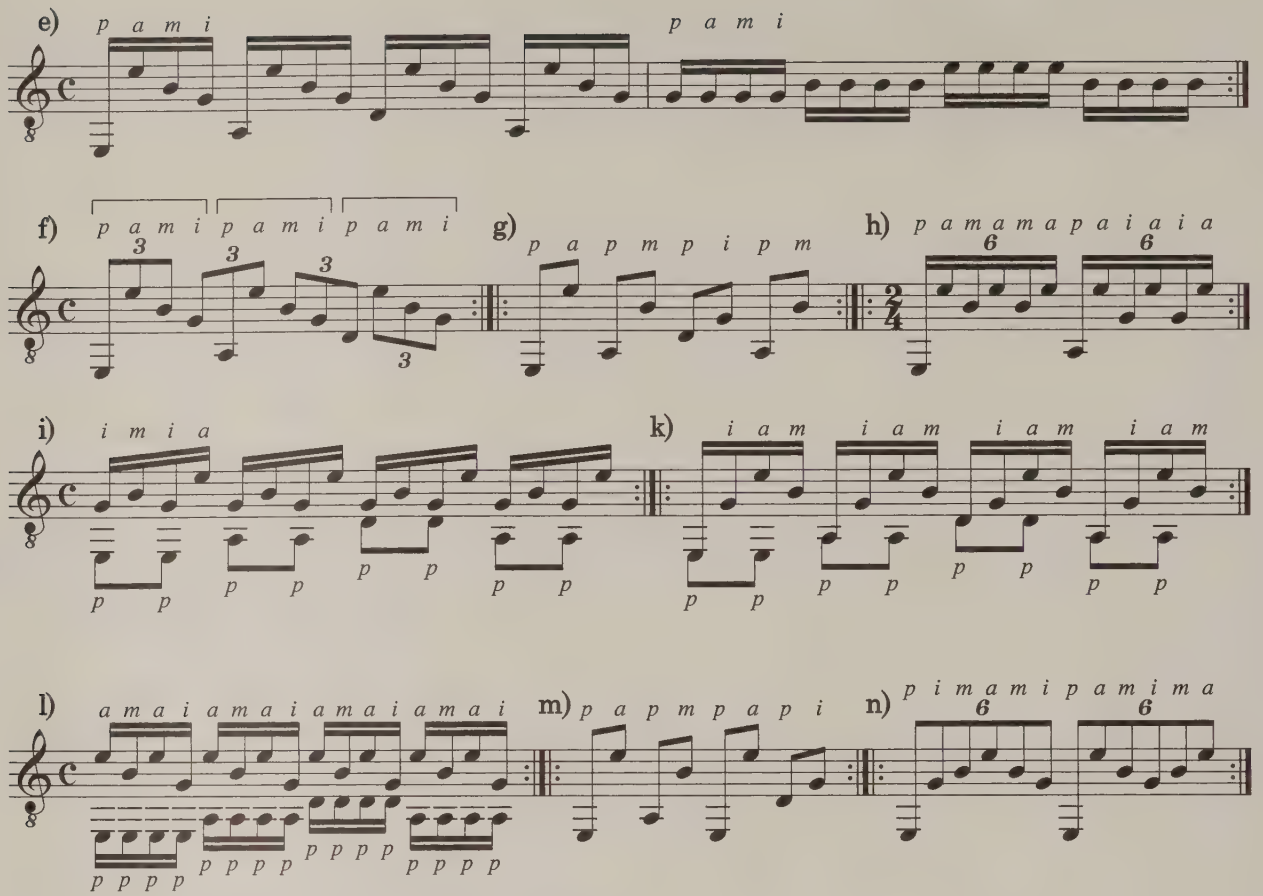
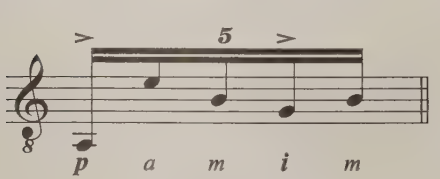
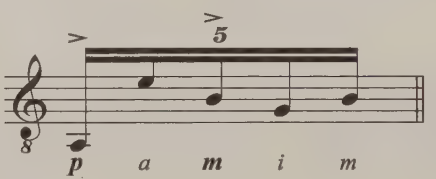


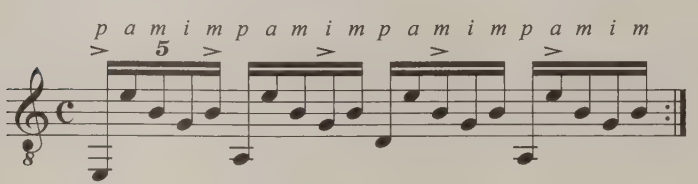
A15 12 Basic Arpeggios as Quintuplets

Due to the asymmetrical rhythmic structure, alternating accents are very helpful here yet demand plenty of attention.

Accents on the 1st and 4th note:



Accents on the 1st and 3rd note:

Accents on each successive 4th note in consecutive quintuplets:



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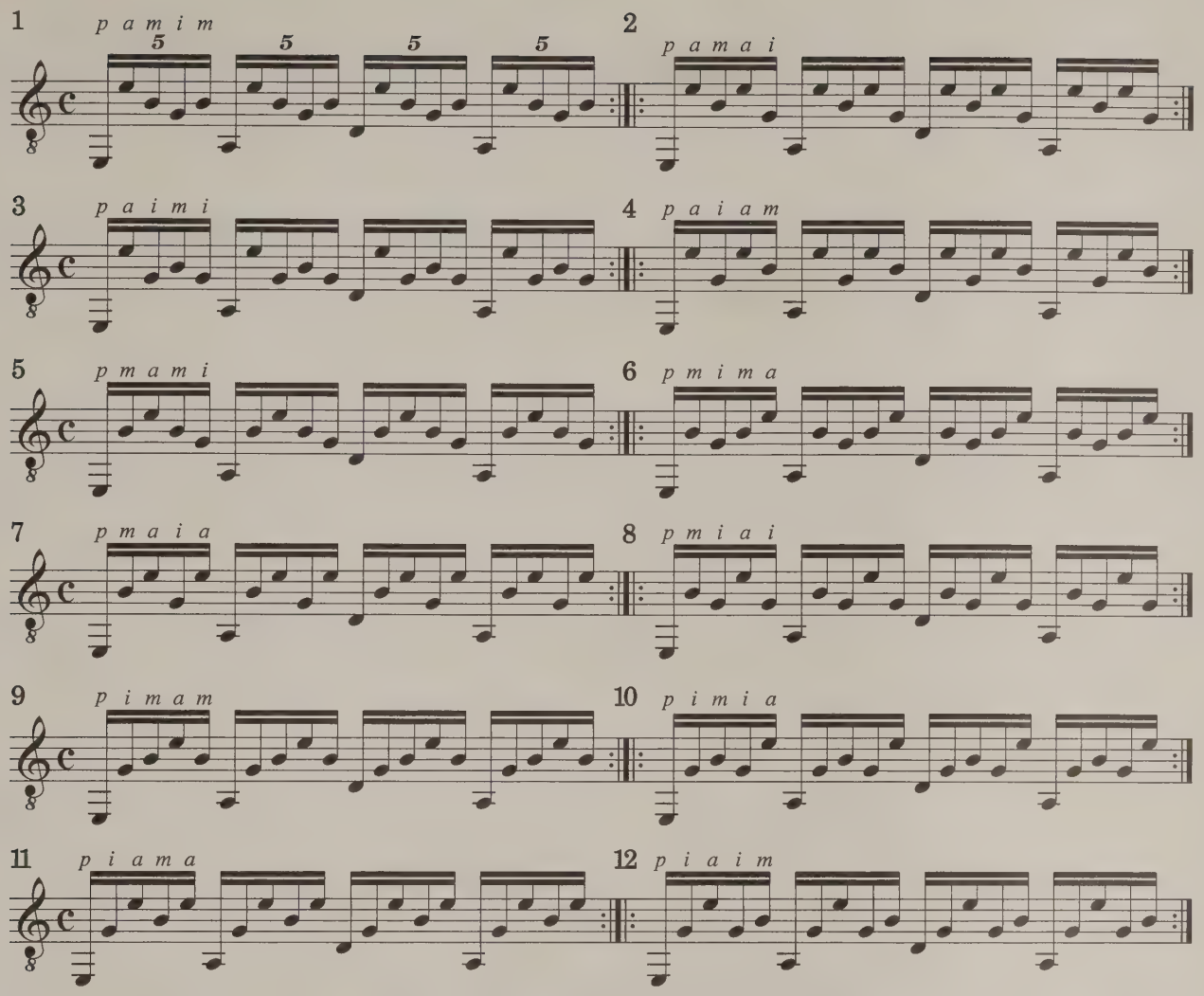
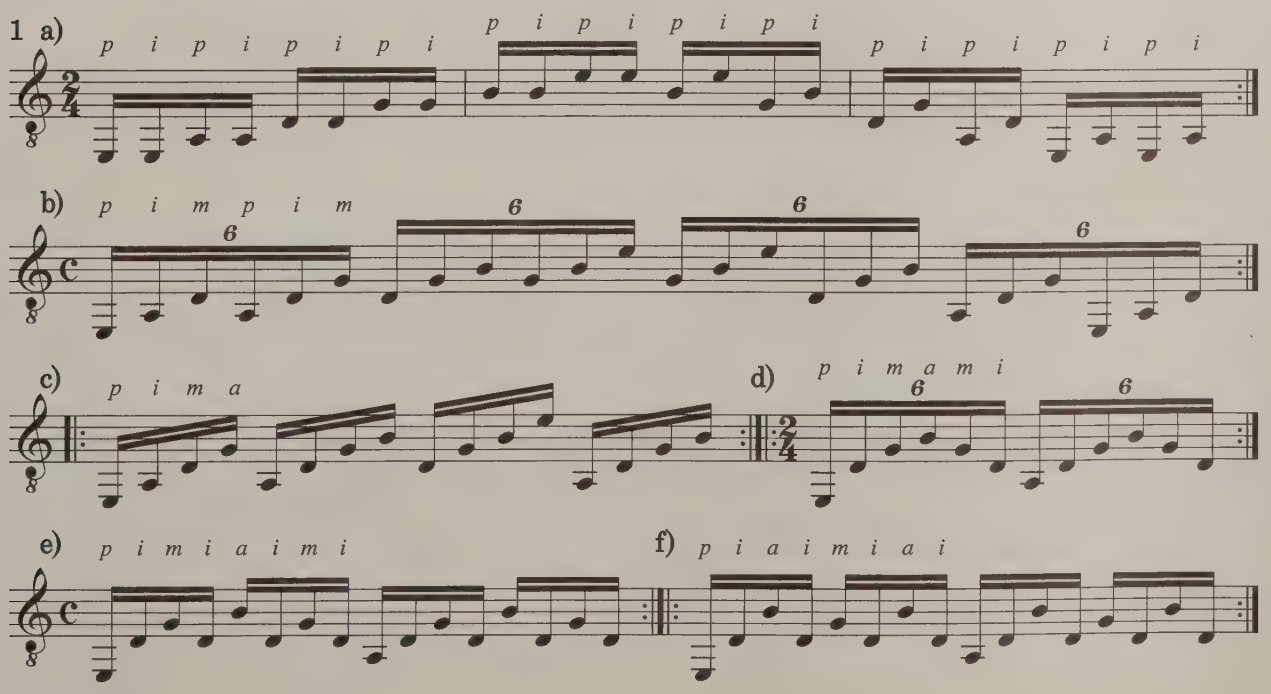


A16 Arpeggios with Two to Eight Note Groupings

Here the focus is on changing between the different patterns including difficult string crossings. Additionally, this offers a slow build-up of the finger muscles: beginning two, three, four, six and eight note groupings, you return to three note arpeggios after playing several six and four note ones.



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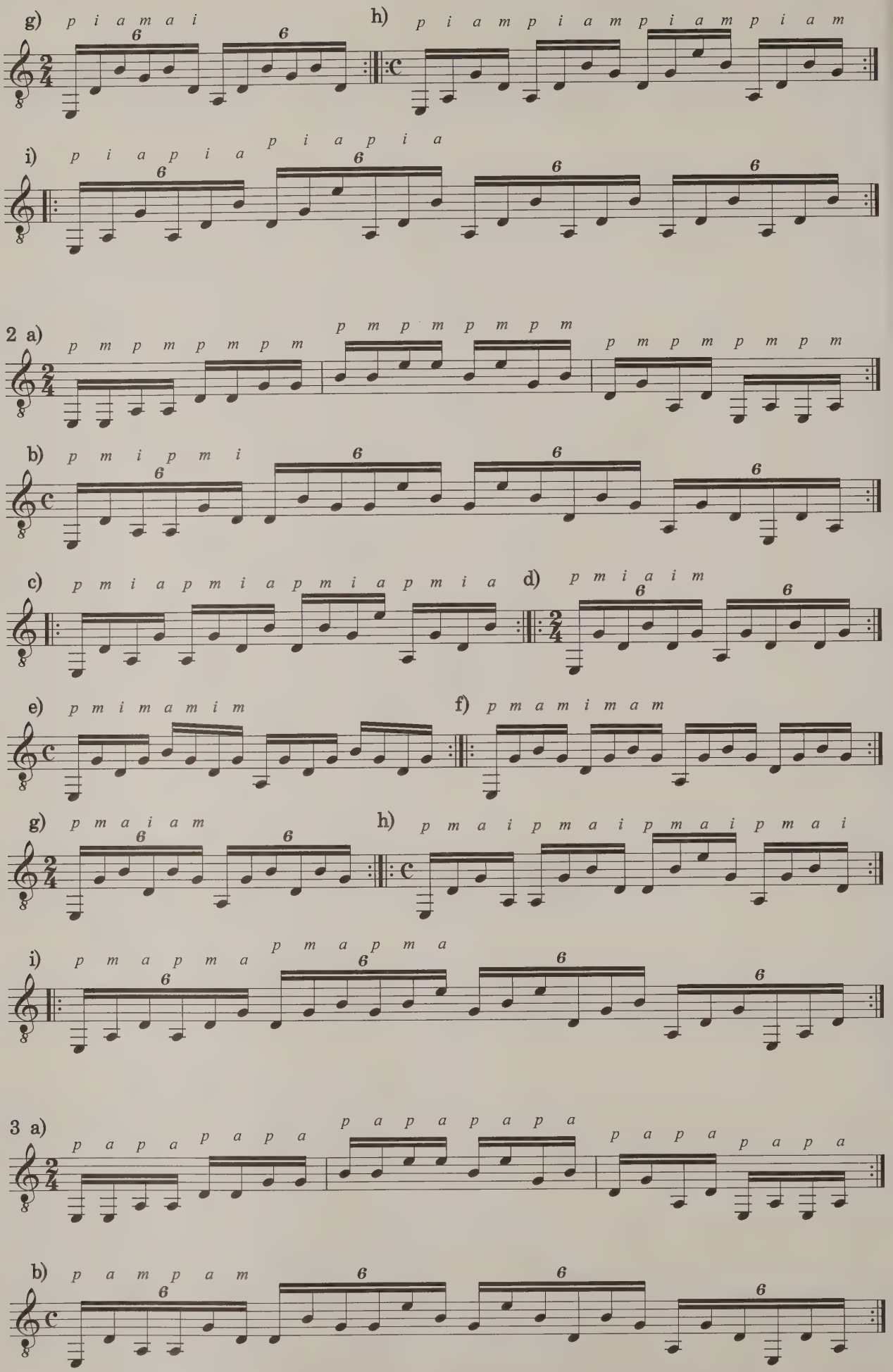
g) p i a m a i
h) p i a m p i a m p i a m p i a m
i) p i a p i a p i a p i a
2 a) p m p m p m p m
p m p m p m p m
p m p m p m p m
b) p m i p m i
c) p m i a p m i a p m i a p m i a
d) p m i a i m
e) p m i m a m i m
f) p m a m i m a m
g) p m a i a m
h) p m a i p m a i p m a i p m a i
i) p m a p m a p m a p m a
3 a) p a p a p a p a
p a p a p a p a
p a p a p a p a
b) p a m p a m

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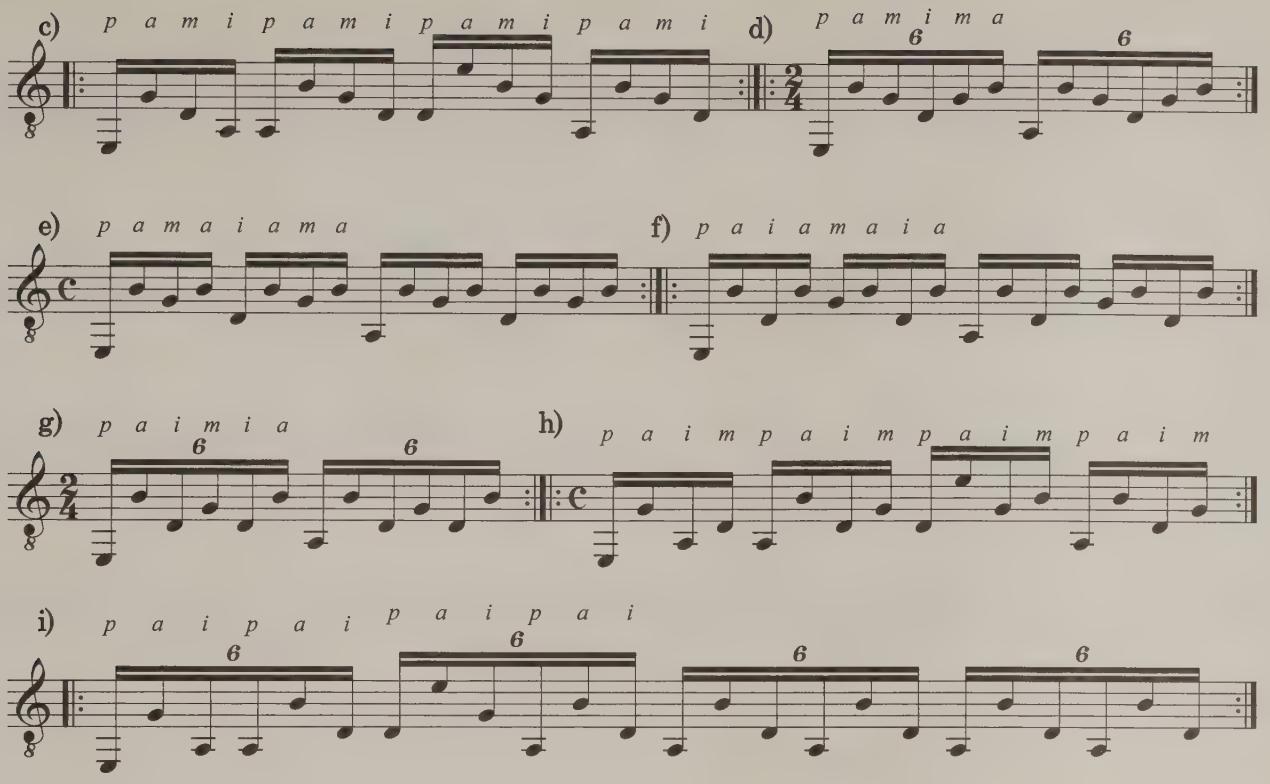
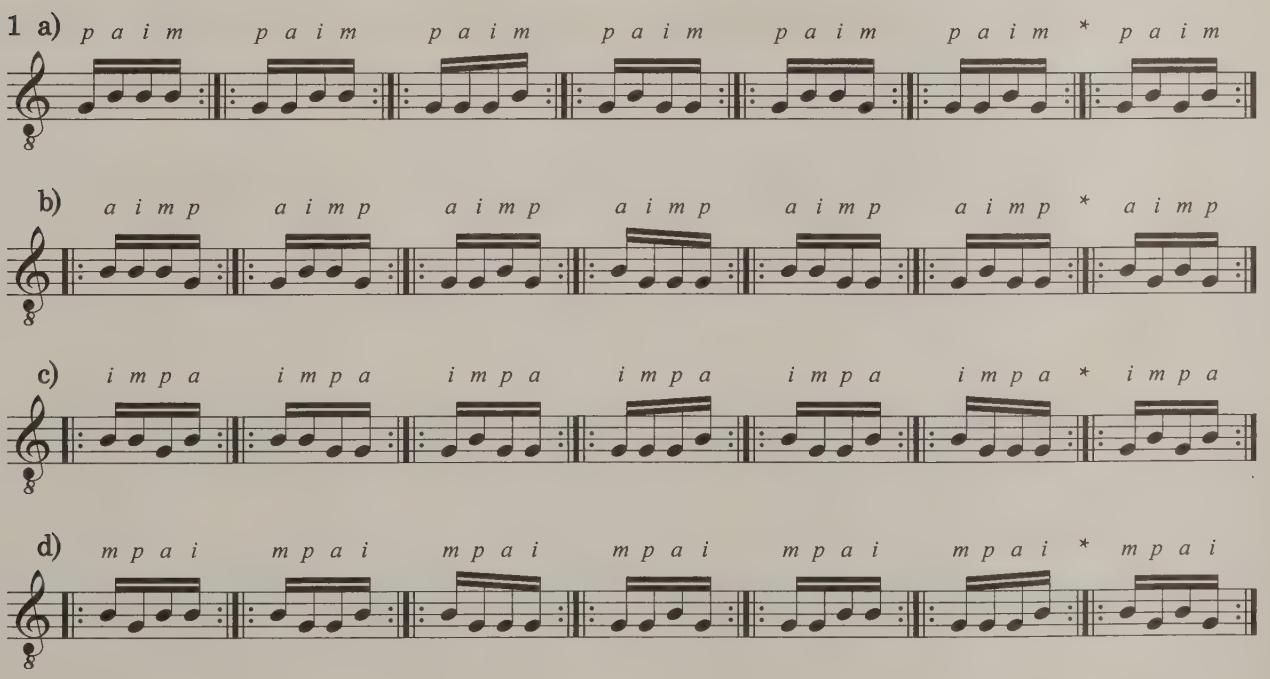


A17 112 Arpeggios on the 2nd and 3rd Treble Strings

To make it clearer, this unit – based on the 6 basic arpeggios (see p. 54) – is divided into 4 groups. As the patterns **p-i-m-a** and **p-a-m-i** are discussed in depth elsewhere (see A23 on page 87 and "V. Tremolo" on page 161), they are not incorporated here. **The patterns marked with an asterisk (*) are ideal preparatory exercises for the trill over two strings.**

1 a) p a i m p a i m p a i m p a i m p a i m p a i m * p a i m
b) a i m p a i m p a i m p a i m p a i m p a i m * a i m p
c) i m p a i m p a i m p a i m p a i m p a i m * i m p a
d) m p a i m p a i m p a i m p a i m p a i m * m p a i

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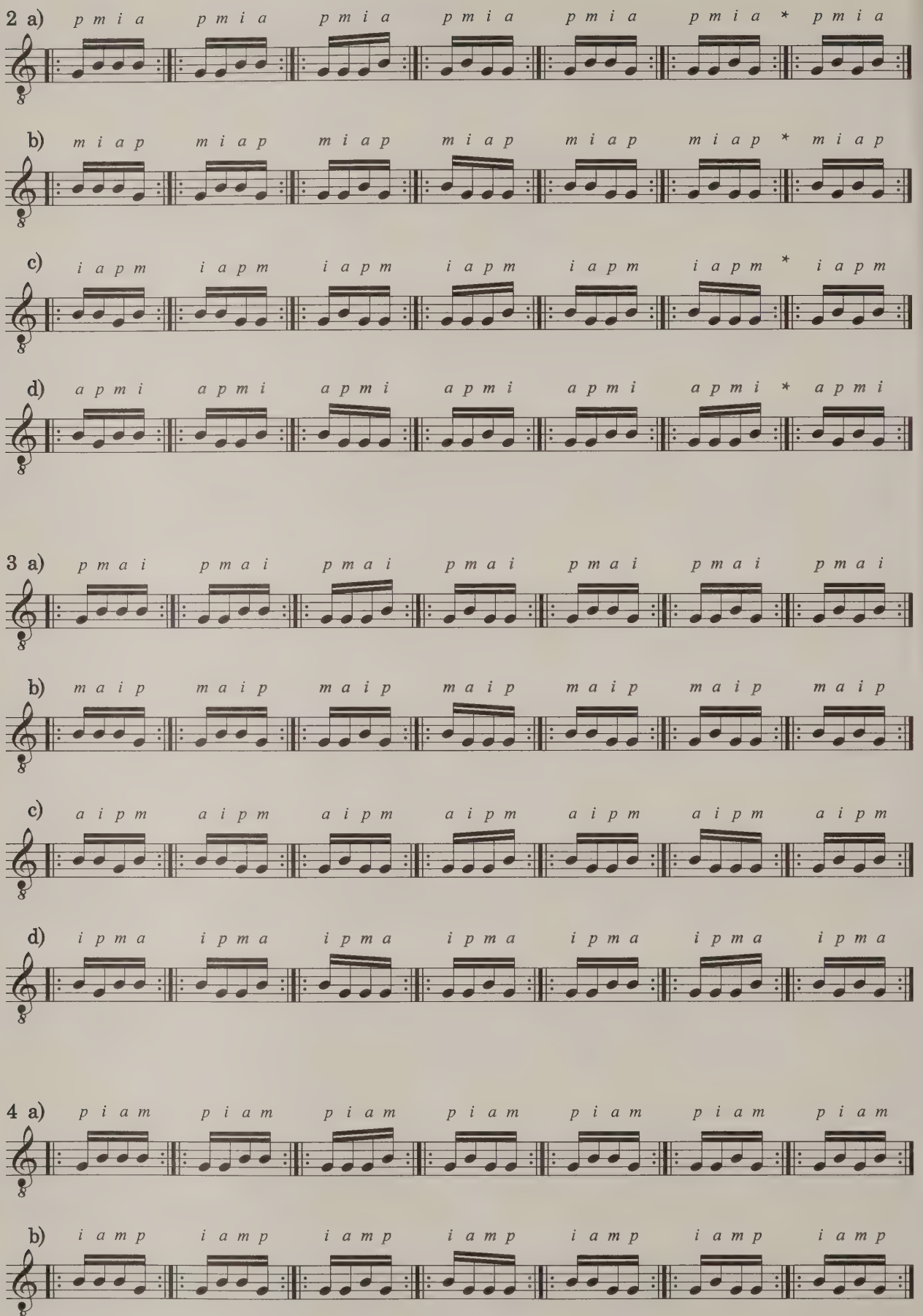
2 a) p m i a p m i a p m i a p m i a p m i a p m i a * p m i a
b) m i a p m i a p m i a p m i a p m i a p m i a * m i a p
c) i a p m i a p m i a p m i a p m i a p m i a * i a p m
d) a p m i a p m i a a p m i a p m i a p m i a * a p m i
3 a) p m a i p m a i p m a i p m a i p m a i p m a i p m a i
b) m a i p m a i p m a i p m a i p m a i p m a i p m a i p
c) a i p m a i p m a i p m a i p m a i p m a i p m a i p m
d) i p m a i p m a i i p m a i p m a i p m a i p m a i p m a
4 a) p i a m p i a m p i a m p i a m p i a m p i a m p i a m
b) i a m p i a m p i a m p i a m p i a m p i a m p i a m p

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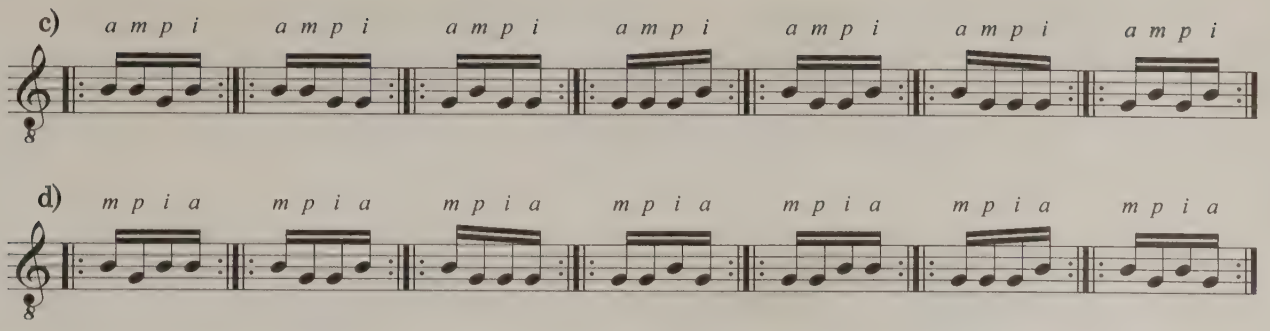
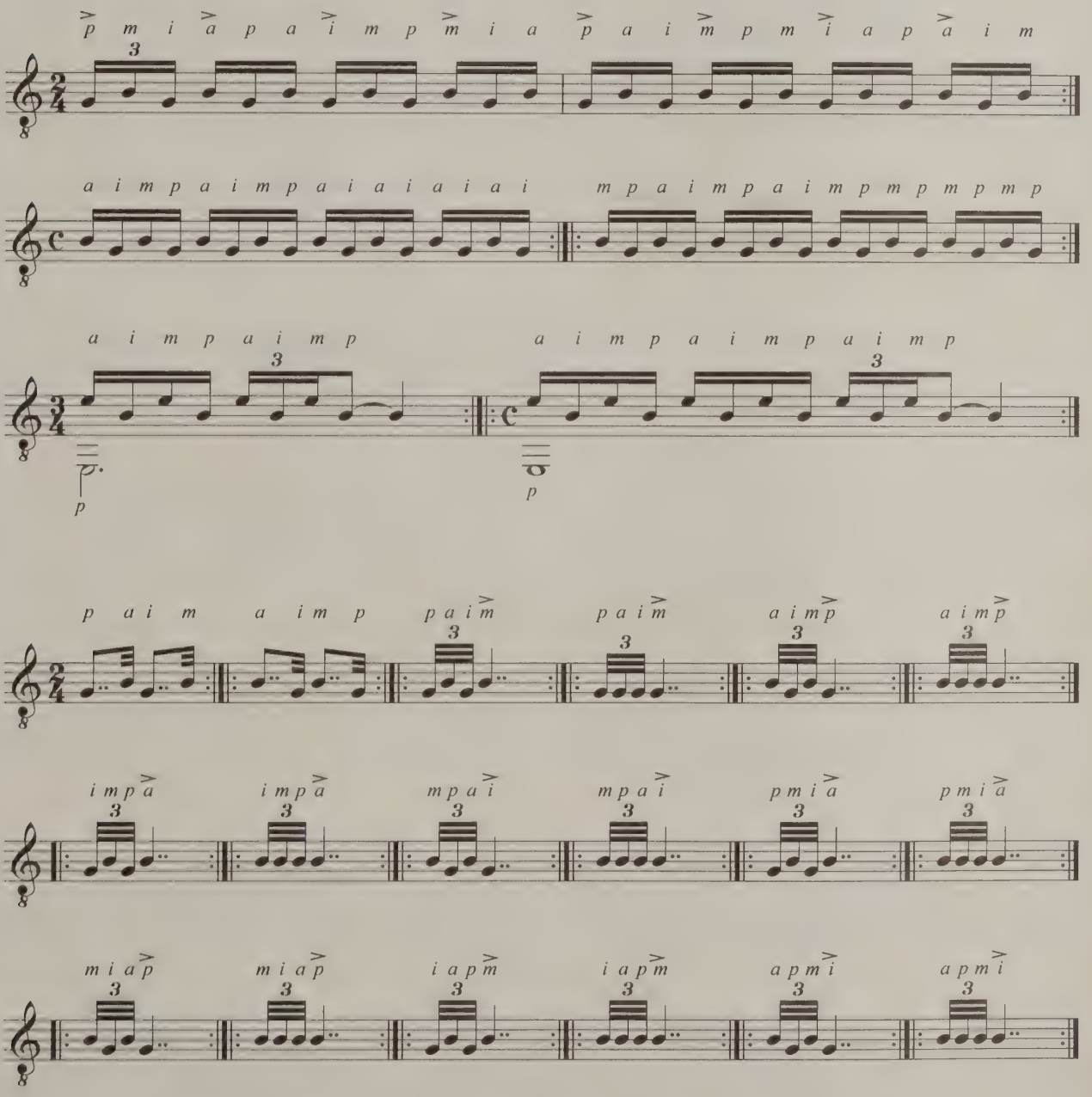


Exercises and rhythmic variations for the baroque trill and a trill over two strings:



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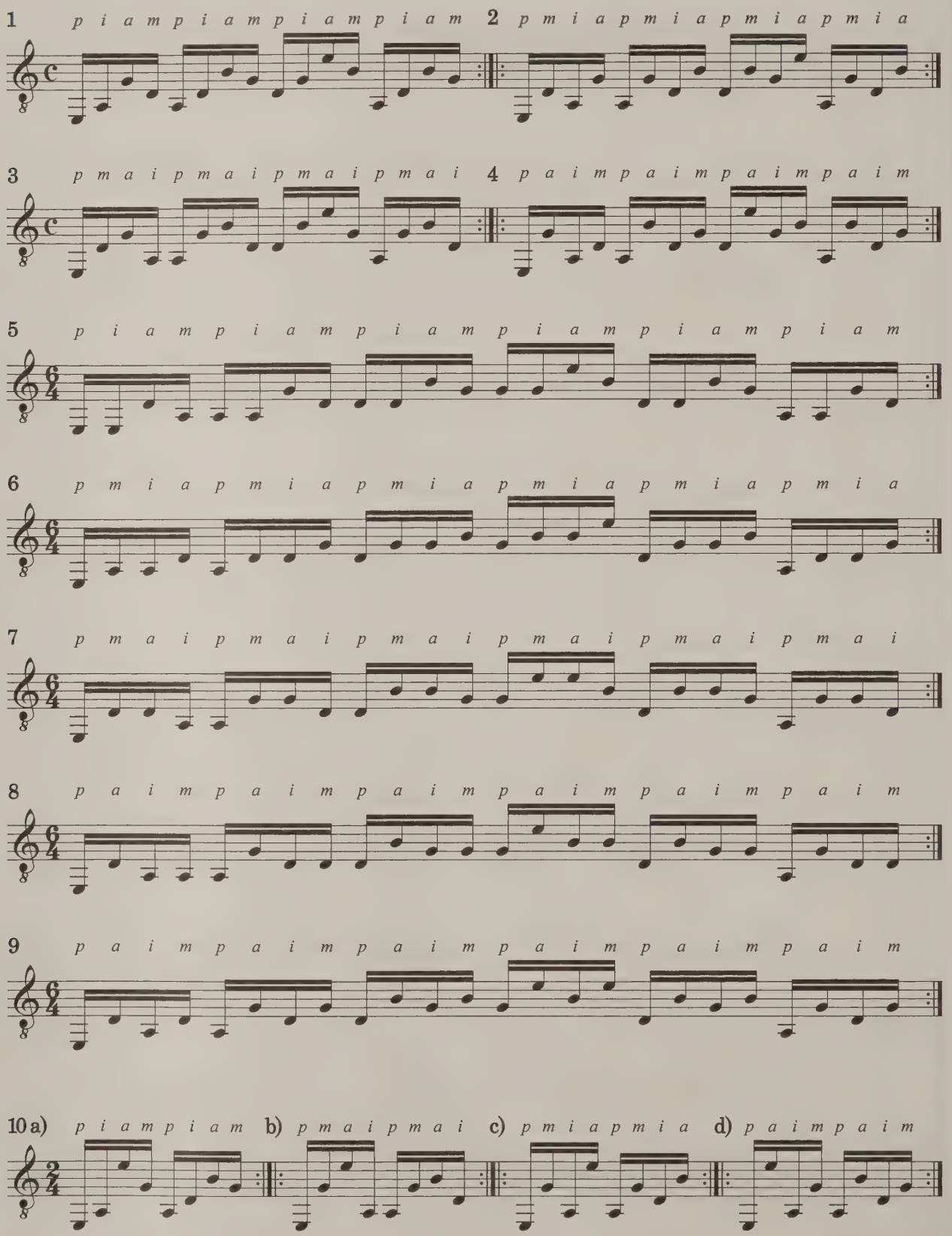
TIP A18 Basic Arpeggios with Difficult String Crossings

Shifting a four note arpeggio pattern on the bass strings to the treble strings and back again is one of the most difficult arpeggios exercises ever. It requires a lot of concentration and supports the accuracy of your right hand.


1 p i a m p i a m p i a m p i a m
2 p m i a p m i a p m i a p m i a
3 p m a i p m a i p m a i p m a i
4 p a i m p a i m p a i m p a i m
5 p i a m p i a m p i a m p i a m p i a m p i a m
6 p m i a p m i a p m i a p m i a p m i a p m i a
7 p m a i p m a i p m a i p m a i p m a i p m a i
8 p a i m p a i m p a i m p a i m p a i m p a i m
9 p a i m p a i m p a i m p a i m p a i m p a i m
10 a) p i a m p i a m
b) p m a i p m a i
c) p m i a p m i a
d) p a i m p a i m

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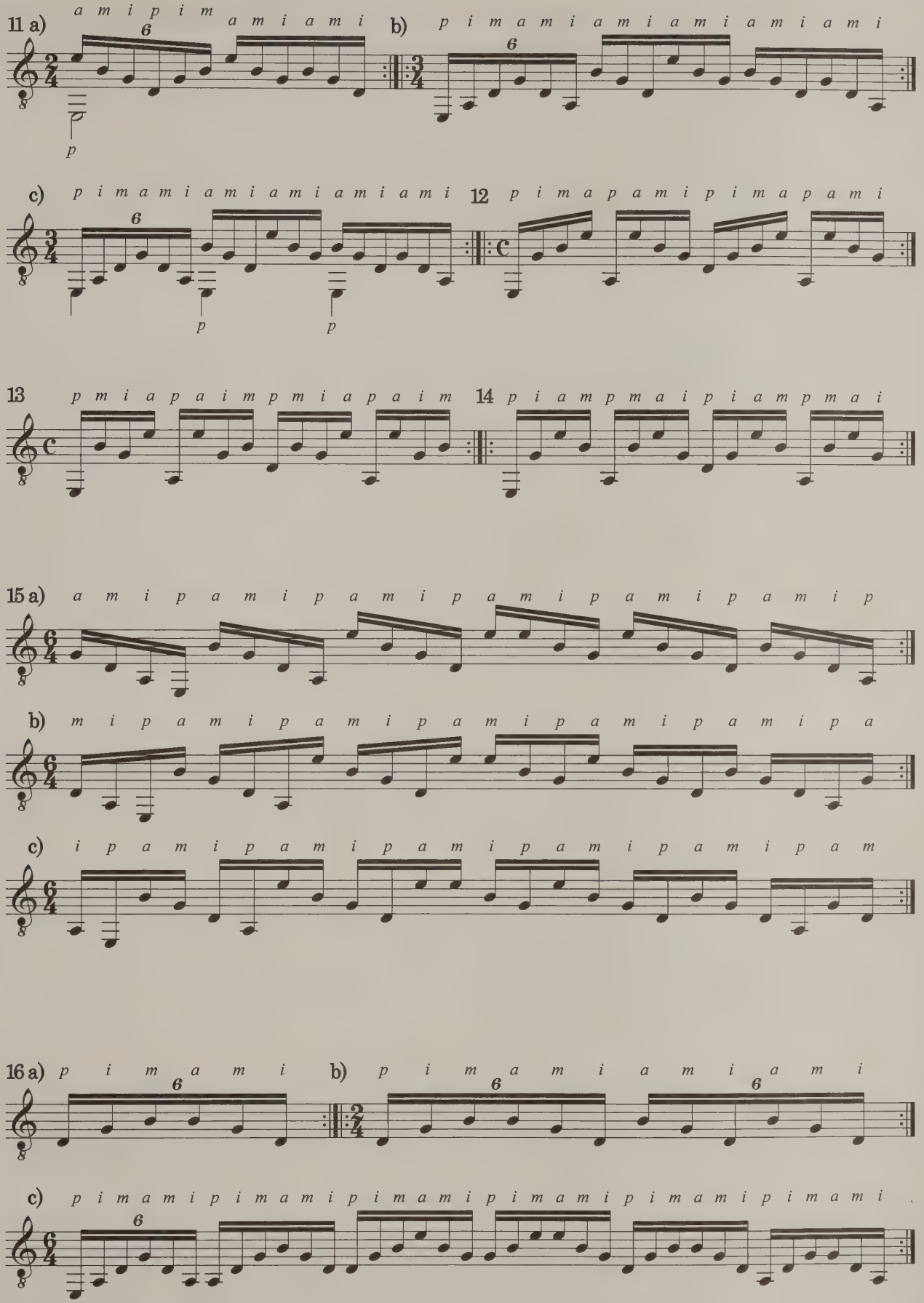
11 a)
a m i p i m a m i a m i
b)
p i m a m i a m i a m i a m i a m i a m i
c)
p i m a m i a m i a m i a m i a m i a m i
12
p i m a p a m i p i m a p a m i
13
p m i a p a i m p m i a p a i m
14
p i a m p m a i p i a m p m a i
15 a)
a m i p a m i p a m i p a m i p a m i p a m i p
b)
m i p a m i p a m i p a m i p a m i p a m i p a
c)
i p a m i p a m i p a m i p a m i p a m i p a m
16 a)
p i m a m i
b)
p i m a m i a m i a m i
c)
p i m a m i p i m a m i p i m a m i p i m a m i p i m a m i p i m a m i

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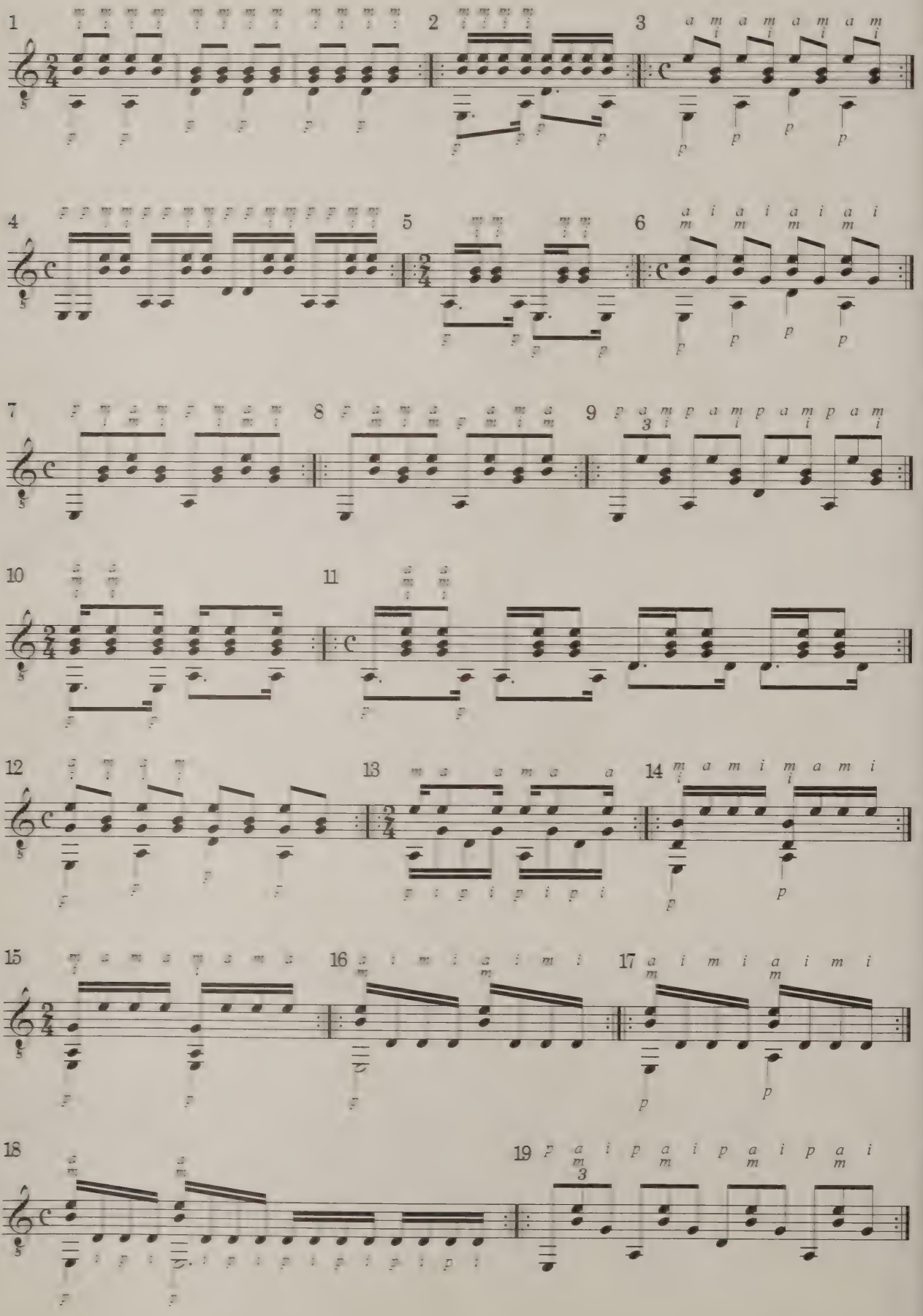
A19 Playing Chords with Arpeggios and Repeated Notes

Playing chords (several notes simultaneously) is often underestimated as a specific technique. Equally, combinations of chords with subsequent repeated notes are also neglected.



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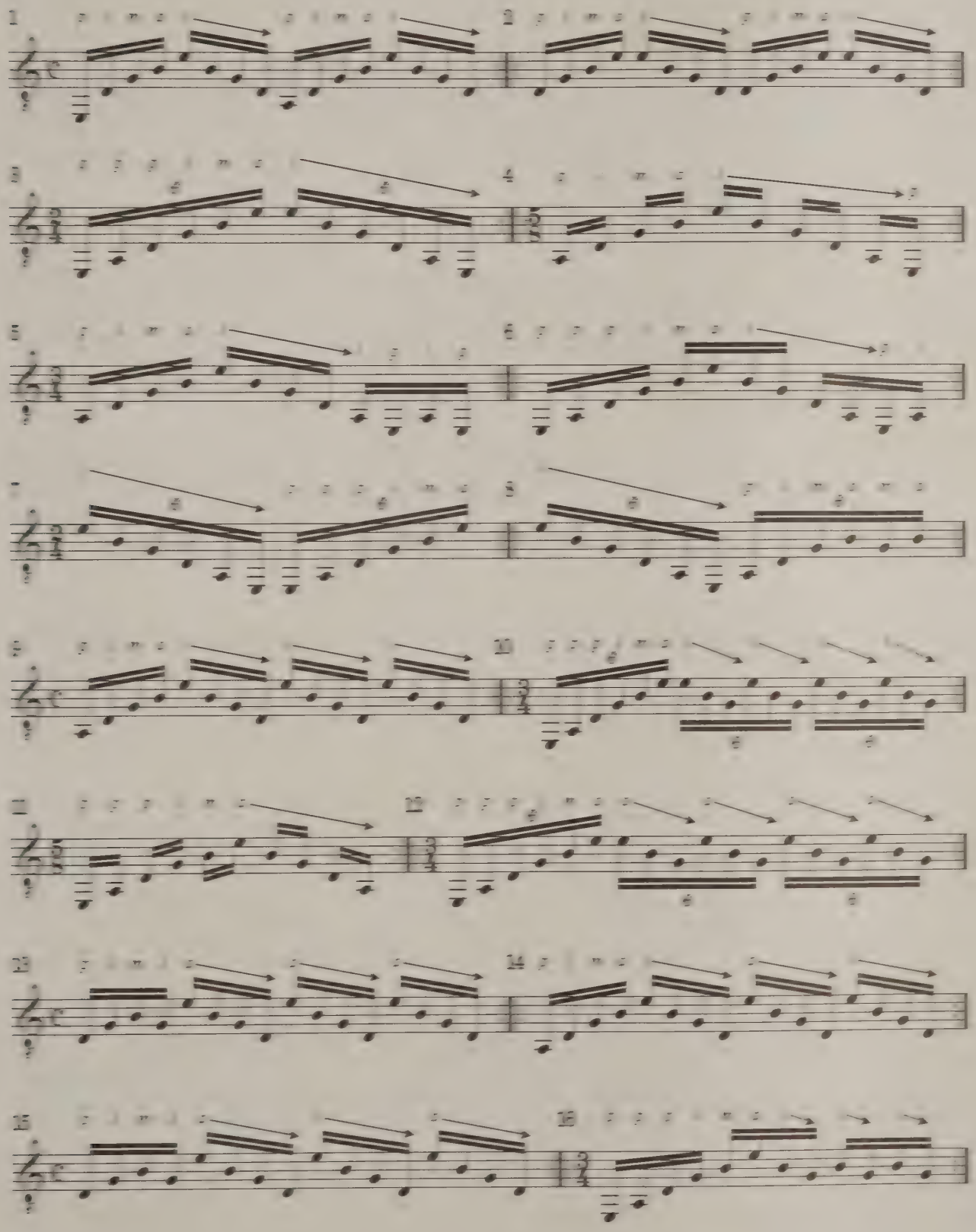
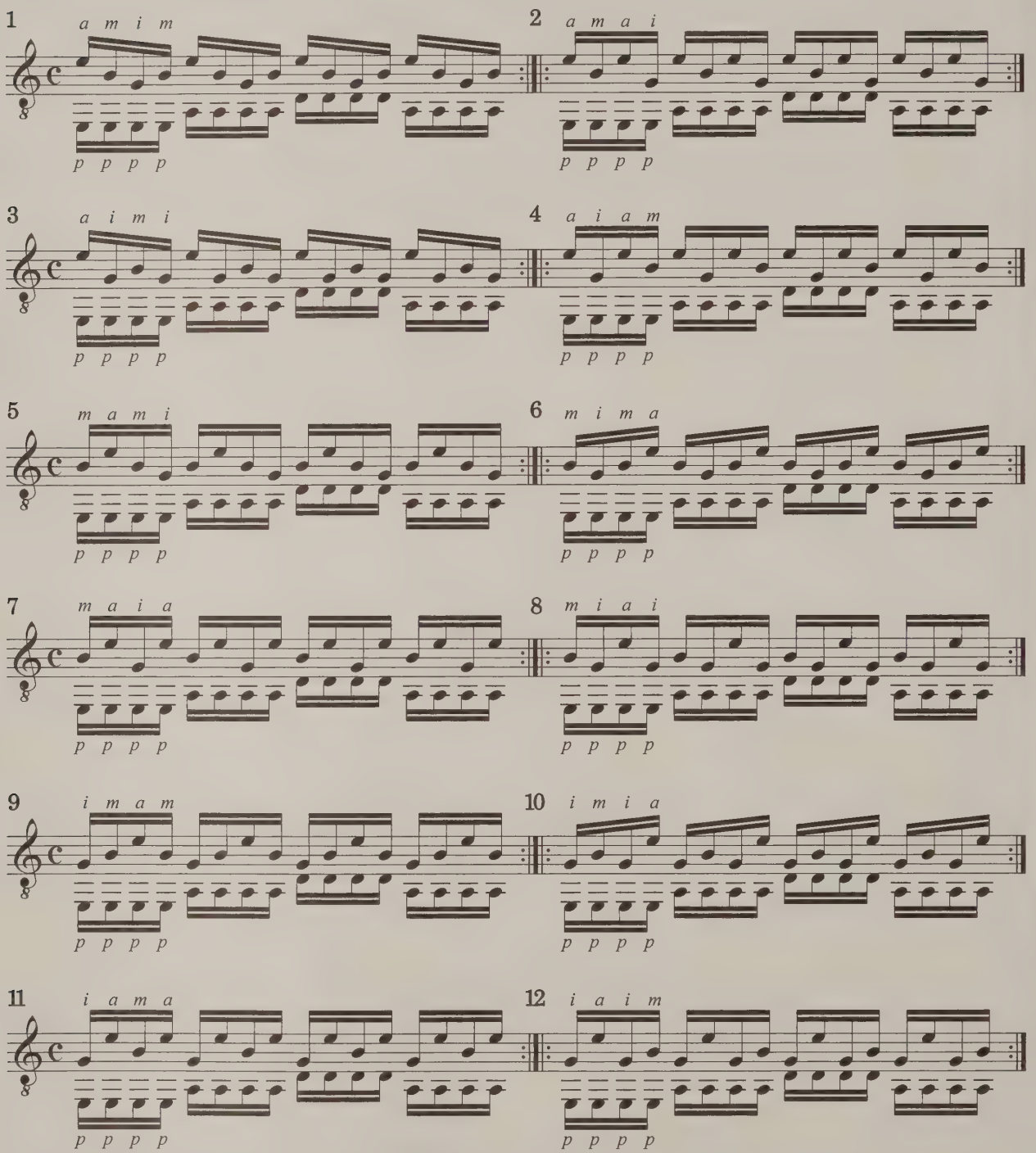
A20 One Finger Arpeggios over Several Strings

Using only a single finger to play very fast, descending arpeggios that proceed from the treble to the bass strings – as have already been employed by Giuliani – can become rhythmically uneven. Therefore practice them slowly and pay attention to the absolute evenness of the notes.

A21 Arpeggios with Thumb Accompaniment to Strengthen Your Attack

In A13 (see p. 72) we already encountered individual arpeggio patterns accompanied by thumb strokes. Here all 12 basic arpeggios are presented with an ongoing thumb accompaniment to strengthen your attack. Be mindful of how you dispense the energy of your stroking fingers so that they don't get too tense. When it comes to the attack, your wrist of course should take part to the least degree possible.



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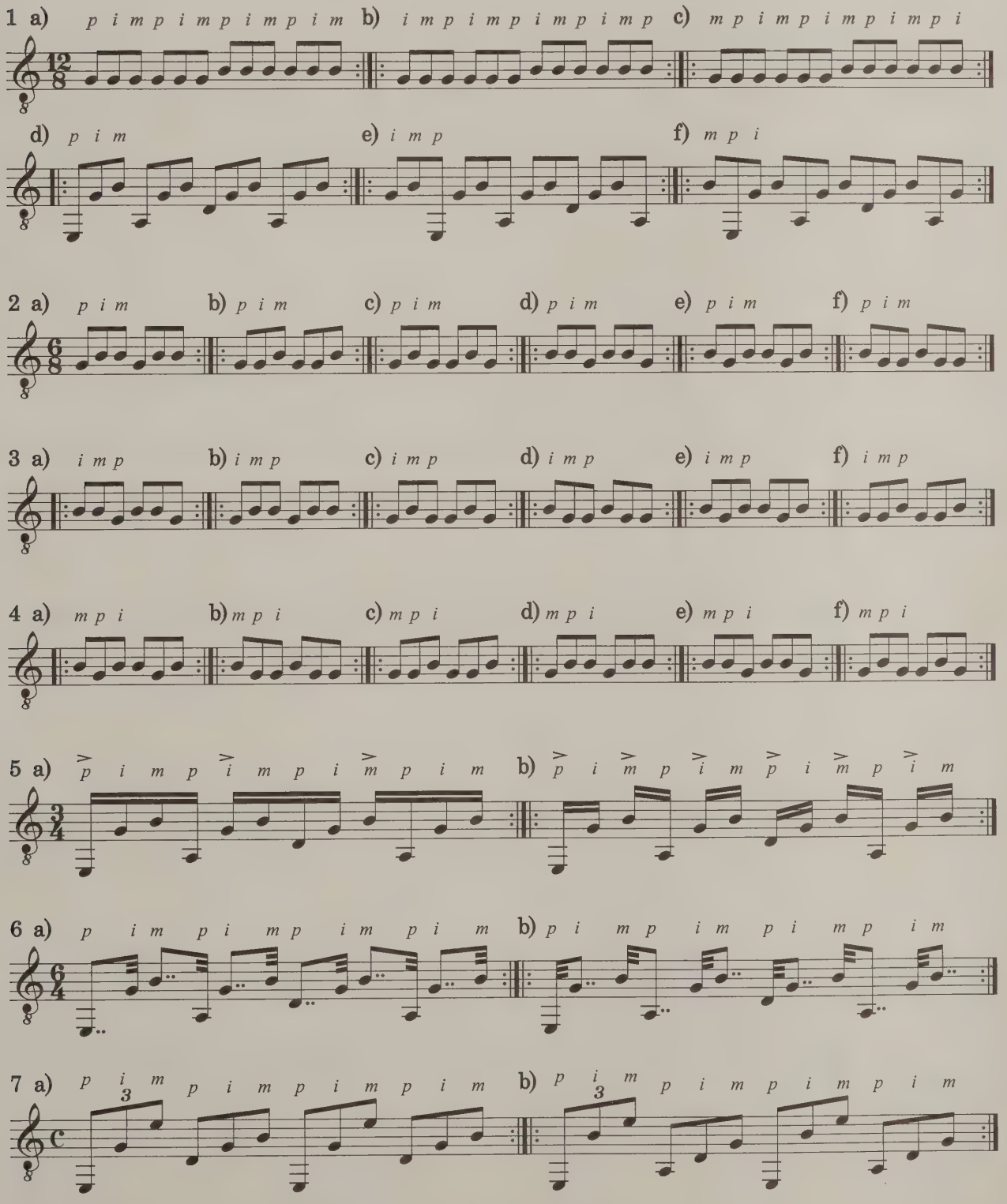
Intensive Training of Important Arpeggios

Very often, technical deficiencies of motion appear when playing the most common arpeggio patterns. The patterns are so familiar and popular that they are categorized from the outset as "simple" and "I can play those anyway" in our minds. These technical deficiencies are ignored due to this attitude. Intensive training of these types of patterns can solve this problem.

A22 Intensive: The Classic Arpeggio Pattern p-i-m

Also applicable to: **p-m-i, p-m-a, p-a-m, p-i-a, p-a-i!**


1 a) p i m p i m p i m p i m b) i m p i m p i m p i m p i m c) m p i m p i m p i m p i
d) p i m e) i m p f) m p i
2 a) p i m b) p i m c) p i m d) p i m e) p i m f) p i m
3 a) i m p b) i m p c) i m p d) i m p e) i m p f) i m p
4 a) m p i b) m p i c) m p i d) m p i e) m p i f) m p i
5 a) p i m p i m p i m p i m b) p i m p i m p i m p i m
6 a) p i m p i m p i m p i m b) p i m p i m p i m p i m
7 a) p i m p i m p i m p i m b) p i m p i m p i m p i m

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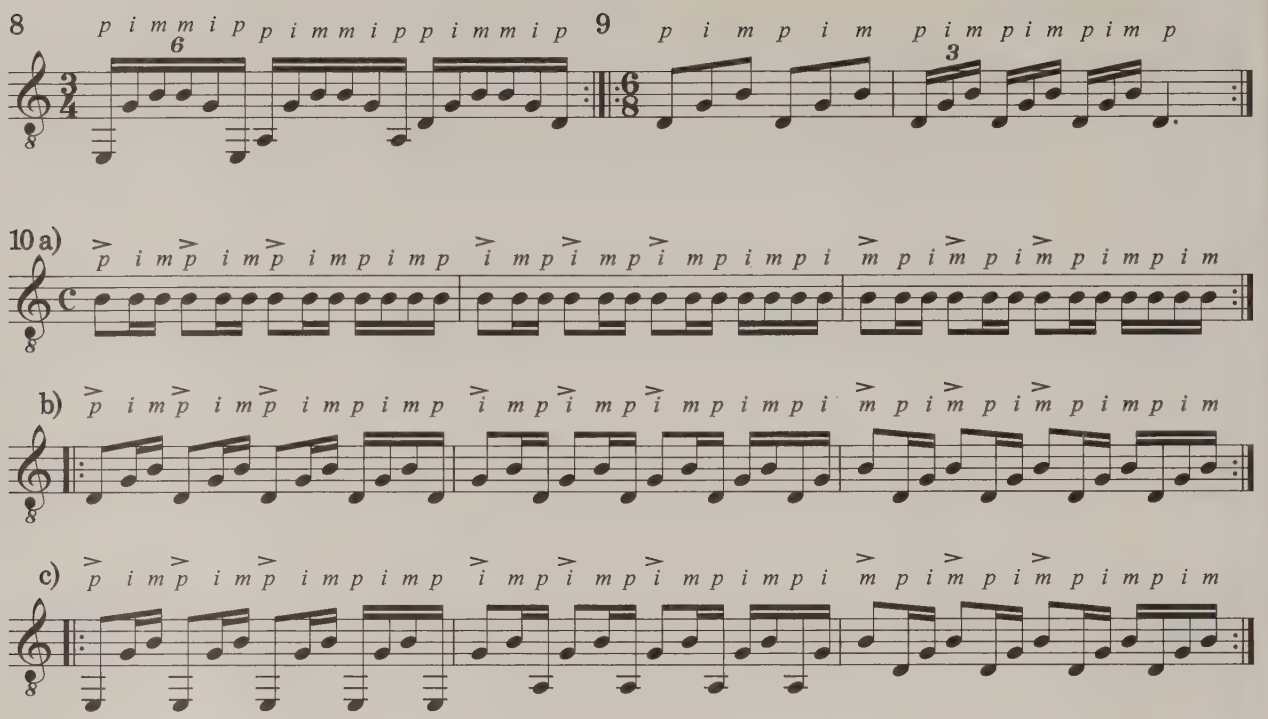
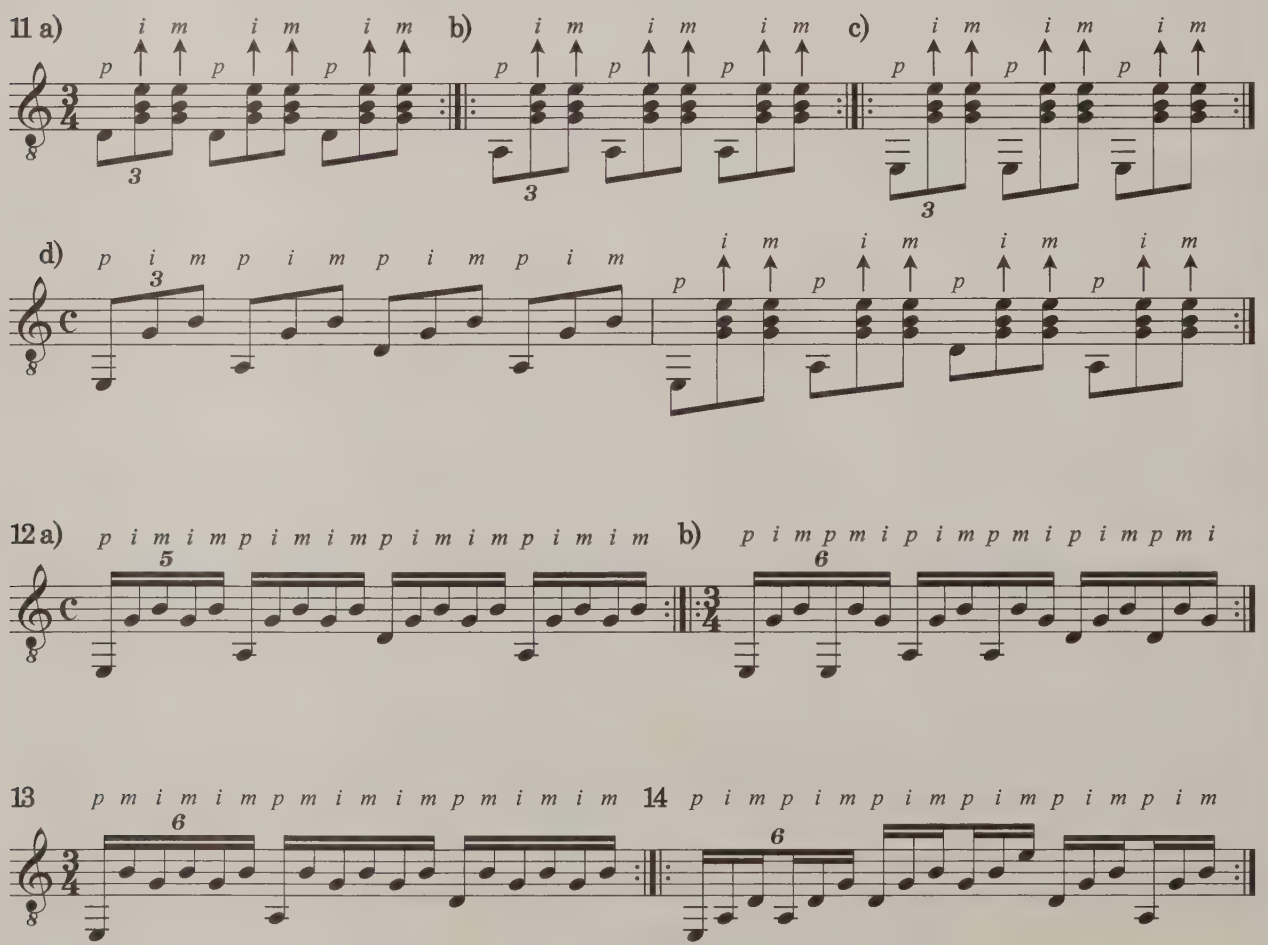


With Rasgueado Technique



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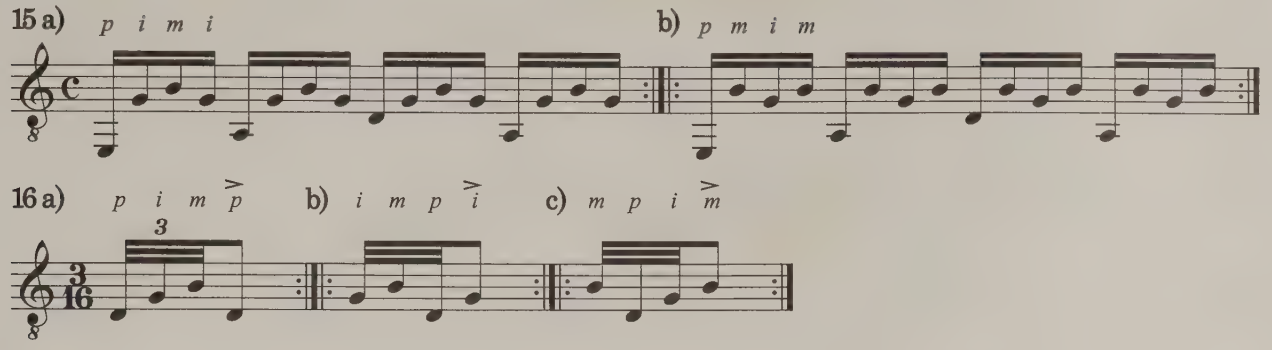
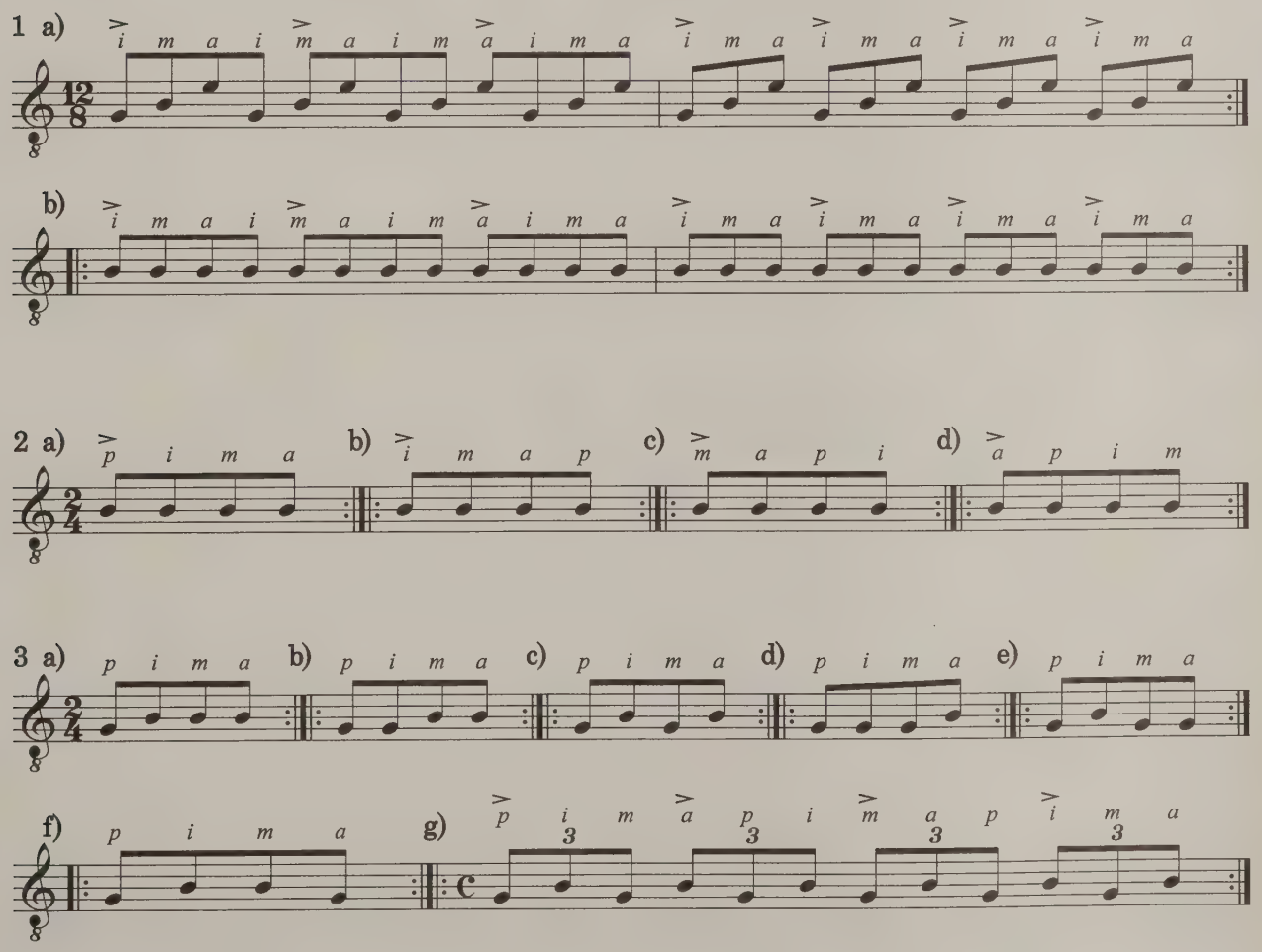
Four note groups support the combination **p-i-m**:

Practice exercises 1–15 to develop your impulses and reflexes (see p. 50). Exercises 1–6, 8–10 and 12 can be practiced with the ring finger of the RH "bound" to the 1st string (see also "Alternation Exercises with Fixed RH Fingers," p. 203).
All the exercises presented here are conceived to stimulate you to create your own exercises.

A23 Intensive: The Classic Arpeggio Pattern p-i-m-a

Also applicable to: **p-i-a-m**, **p-a-m-i**, **p-m-i-a**, **p-m-a-i**, **p-a-i-m**!

Preparatory Exercise


1 a) i m a i m a i m a i m a i m a i m a i m a i m a
b) i m a i m a i m a i m a i m a i m a i m a i m a
2 a) p i m a
b) i m a p
c) m a p i
d) a p i m
3 a) p i m a
b) p i m a
c) p i m a
d) p i m a
e) p i m a
f) p i m a
g) p i m a p i m a p i m a

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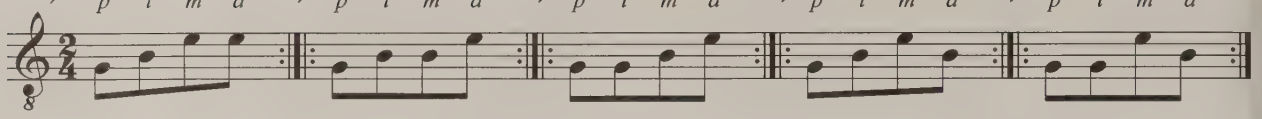
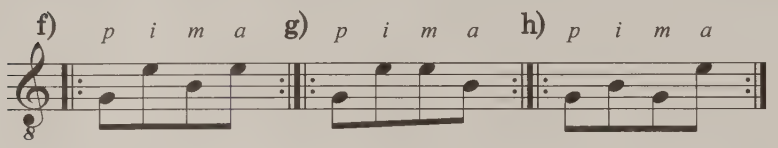
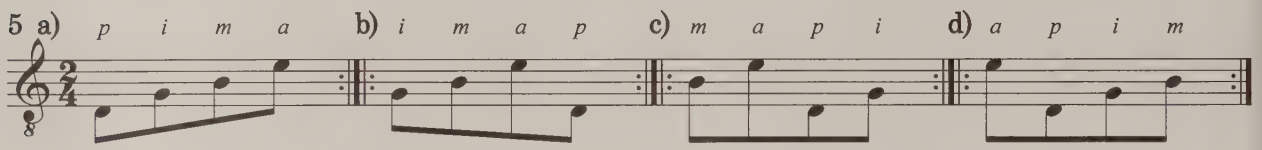
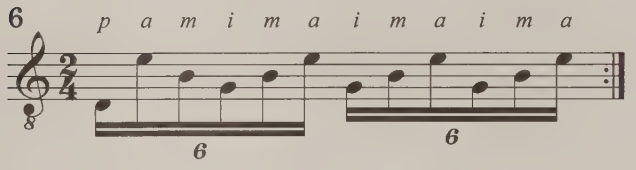
4 a) p i m a b) p i m a c) p i m a d) p i m a e) p i m a



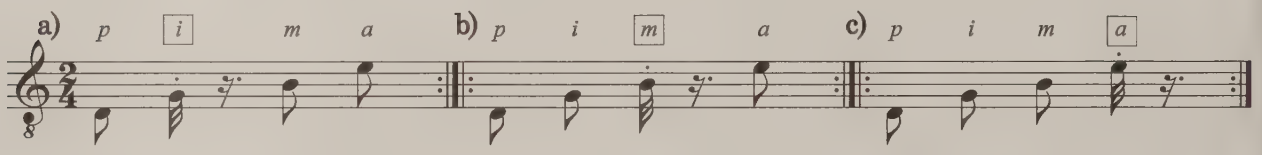
f) p i m a g) p i m a h) p i m a

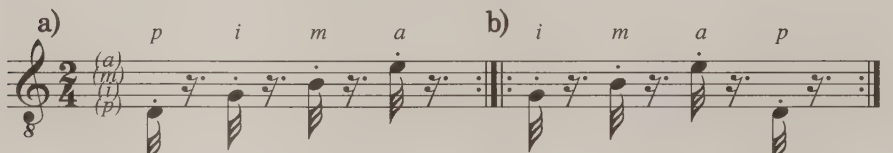


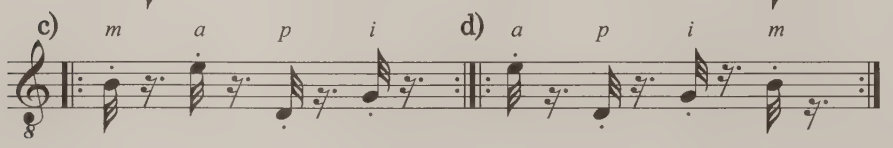
5 a) p i m a b) i m a p c) m a p i d) a p i m

6 p a m i m a i m a i m a

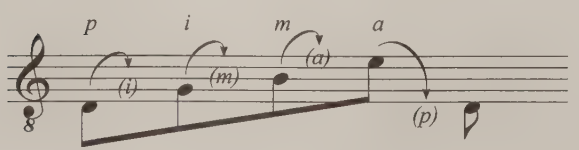


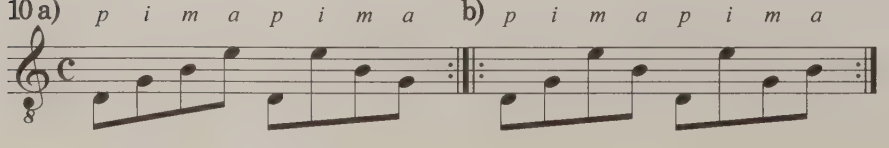
7 Exercise with fixed fingers:

a) p [i] m a b) p i [m] a c) p i m [a]

8 Staccato reflex development (see page 51)

a) p i m a b) i m a p

c) m a p i d) a p i m



9 Practice with pure reflex development (see page50).
Proceed similarly with exercises 1–6 and 10–15!

10 a) p i m a p i m a b) p i m a p i m a



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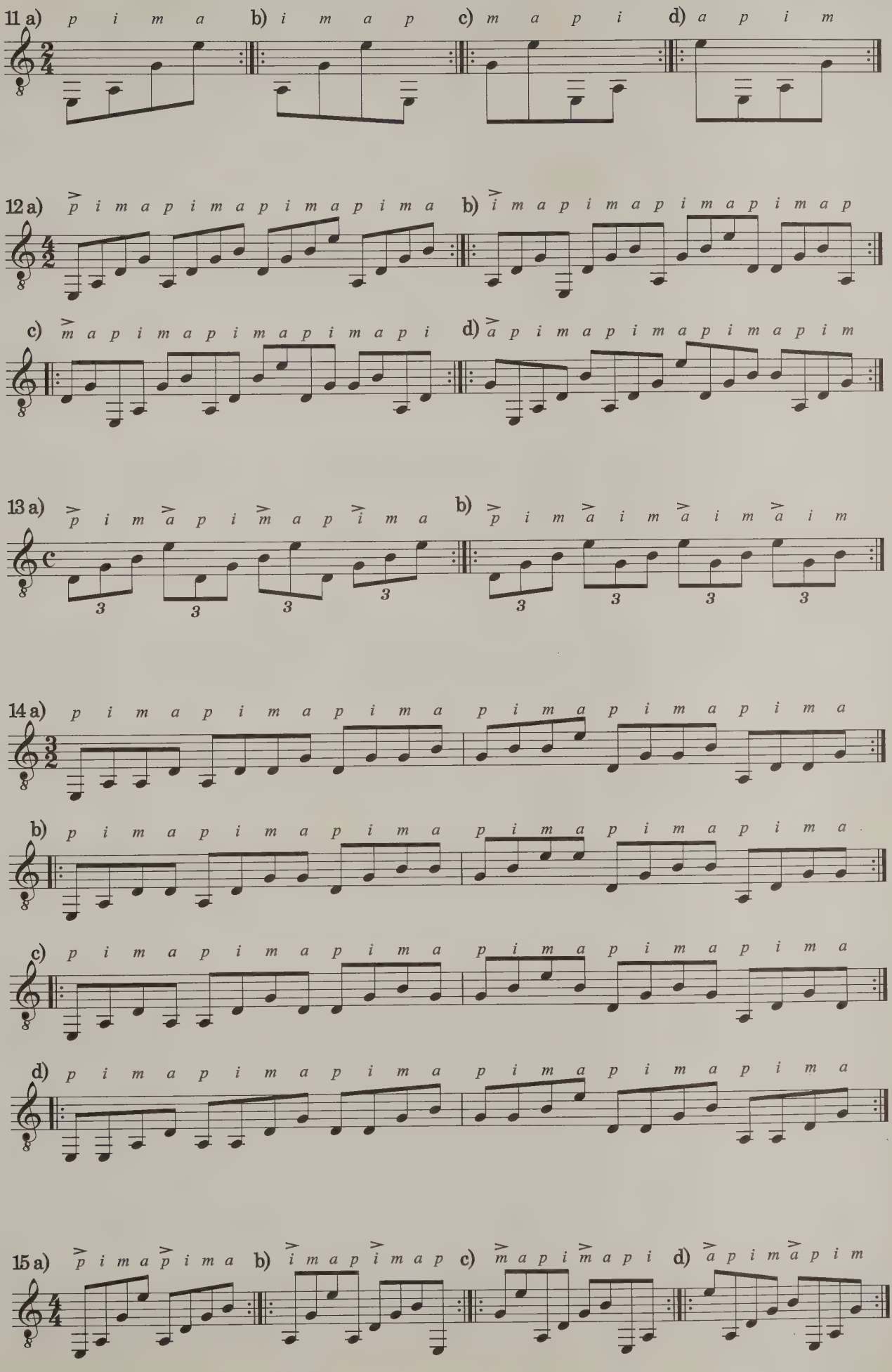
11 a) p i m a b) i m a p c) m a p i d) a p i m
12 a) p i m a p i m a p i m a p i m a b) i m a p i m a p i m a p i m a p
c) m a p i m a p i m a p i m a p i d) a p i m a p i m a p i m a p i m
13 a) p i m a p i m a p i m a b) p i m a i m a i m a i m
14 a) p i m a p i m a p i m a p i m a p i m a p i m a p i m a
b) p i m a p i m a p i m a p i m a p i m a p i m a p i m a
c) p i m a p i m a p i m a p i m a p i m a p i m a p i m a
d) p i m a p i m a p i m a p i m a p i m a p i m a p i m a
15 a) p i m a p i m a b) i m a p i m a p c) m a p i m a p i d) a p i m a p i m

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II. Coordination of the Left and Right Hands

Coordination of the left and right hands forms the foundation of guitar technique. The most common form of coordination is synchronization, the simultaneous acting of the LH and RH, while coordination is generally understood to be the temporal adjustment of both hands. The complex progress of temporal adjustment can be best explained by a few examples:

- To ensure secure tone production, the LH fingers are often brought into place on the strings before the attack of the RH, for example at the beginning of a piece.
- Conversely, the fingers of the RH are frequently planted on the strings before the LH fingers are brought into position.
- The fingers of the RH touch the strings before a change of position is to be performed in order to mute the noises created while shifting.
- It is not uncommon to place all the fingers of the LH on their respective frets in advance (i.e. before a tone is produced) when playing descending chromatic runs.
- When crossing strings at a moderate tempo, the LH finger executing the change is placed on the string in advance.

These issues address the temporal adjustment of the hands. Especially during long movements or at moderate tempos, these aspects have to be well organized right down to the last detail. At fast tempos, the fingers of both hands have to be perfectly synchronized. The following exercises apply mainly to the synchronization of both hands.

Speed and String Crossing Exercises in the Right Hand

Fluency, speed and string crossing exercises solely for the RH on open strings or with fingered notes (scales) form the foundation for synchronization exercises. Exercises solely for the LH, such as slur and or percussion exercises, are equally as valuable but don't have the same impact regarding coordination as do the exercises for the RH alone.

There are 12 possible combinations of two fingers:
m-i, i-m, m-a, a-m, i-a, a-i, p-i, i-p, p-m, m-p, less common are **a-p, p-a**.

Of all the **possible patterns using 3 fingers**, only **a-m-i** and **p-m-i** are considered here as they are best suited for rapid passages or scale-type runs. By shifting the initial finger of both finger combinations, two further combinations are respectively created:

a-m-i p-m-i
m-i-a m-i-p
i-a-m i-p-m

Further combinations, for example **a-m-i-m** or **a-m-a-i** will be used in detail when scales are discussed (pS. 115). In the following section, often only the RH fingerings **m-i/i-m** and **a-m-i/p-m-i** will be indicated. The remaining combinations should be used as needed, for example for practicing **m-a** and **a-m**, two of the most difficult yet extremely important patterns.

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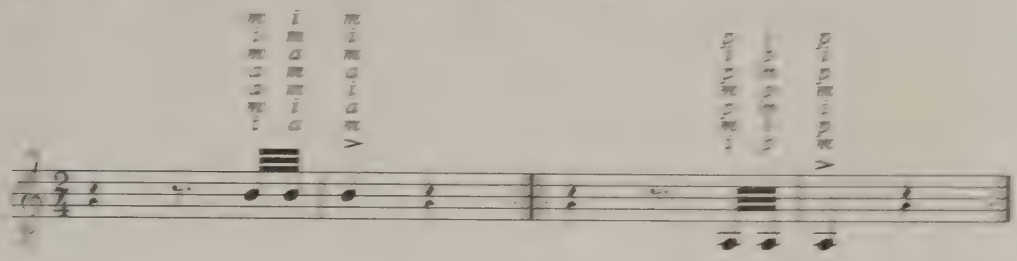
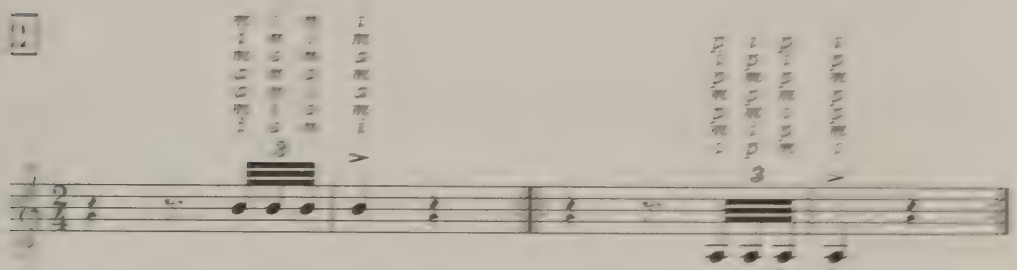
Speed Exercises with Repeating Rhythms on a Single String

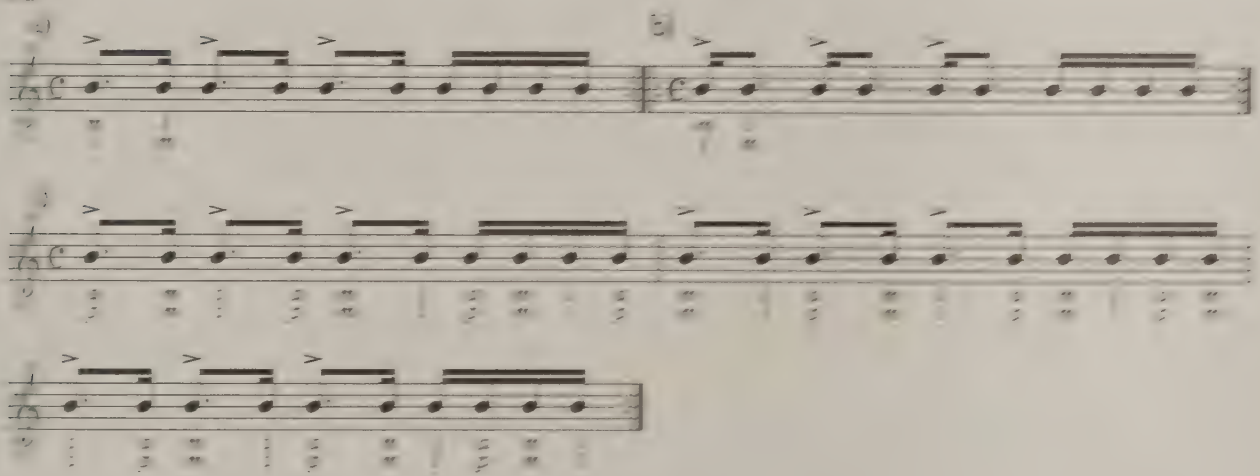
I Practice in tirando *and* apoyando on all strings



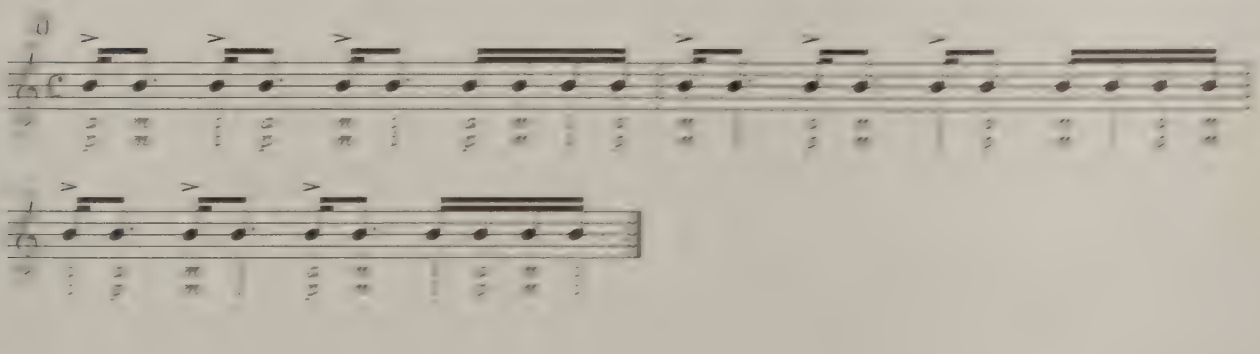
II

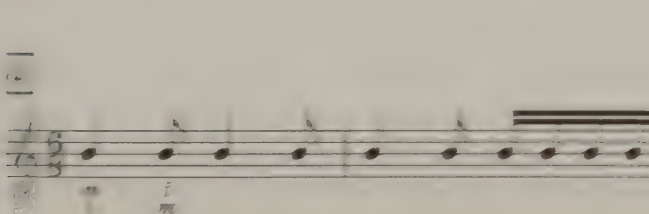


III

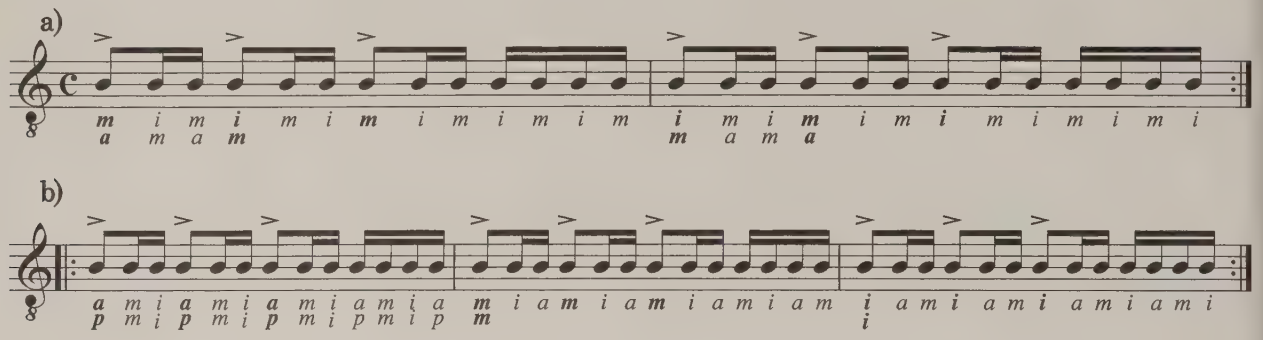
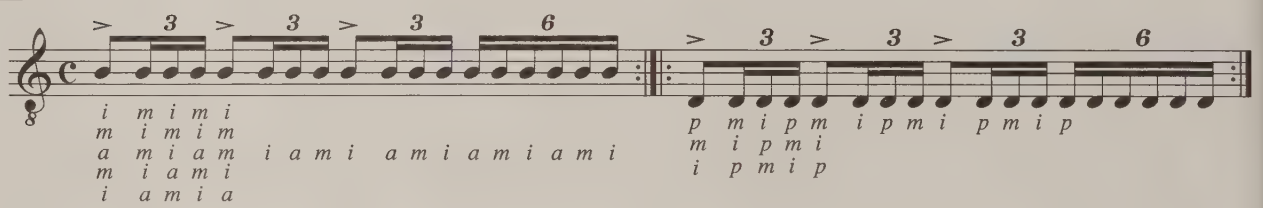


IV

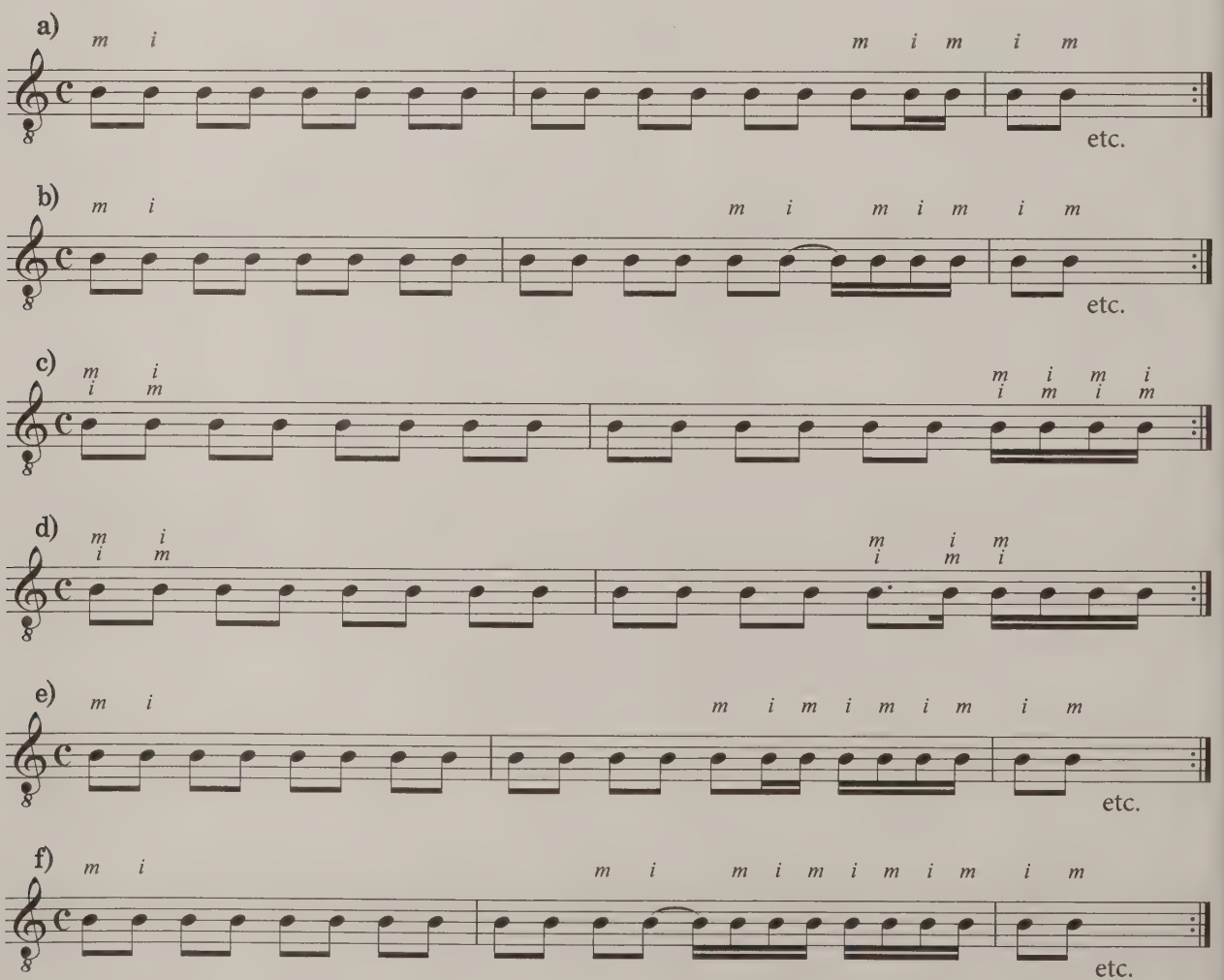




V

TIP 5 **Exercises 5 and 6** are very effective because of the incorporated accents.

TIP 6

Speed Exercises

7 All exercises should be performed on all strings in tirando as well as apoyando, likewise repeat **a-m**, **p-i**, **p-m-i** and **a-m-i** approx. 4 to 6 times, see also "IX. Practicing Playing Fast," p. 206.



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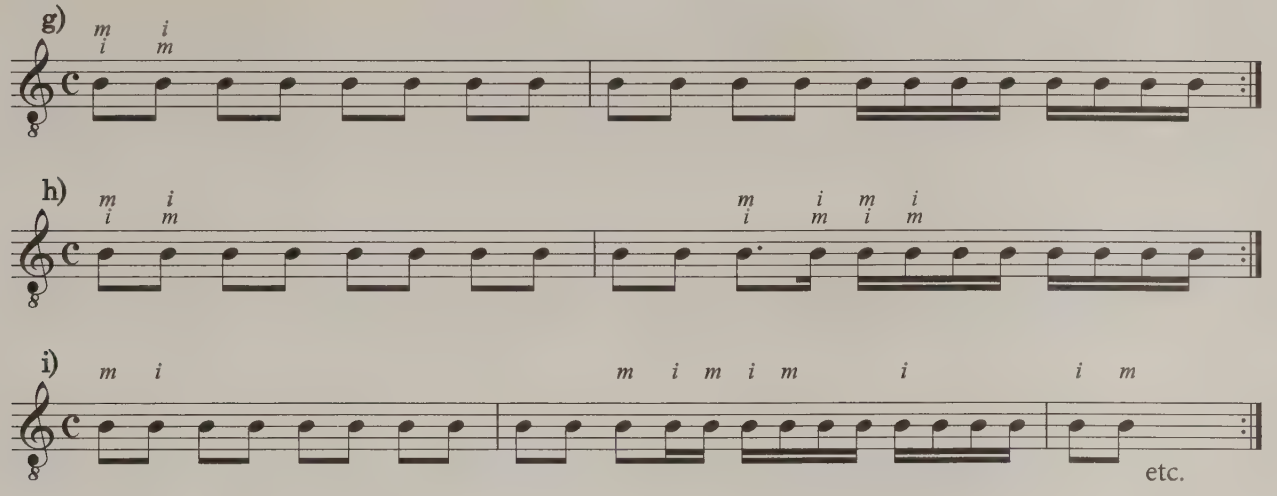
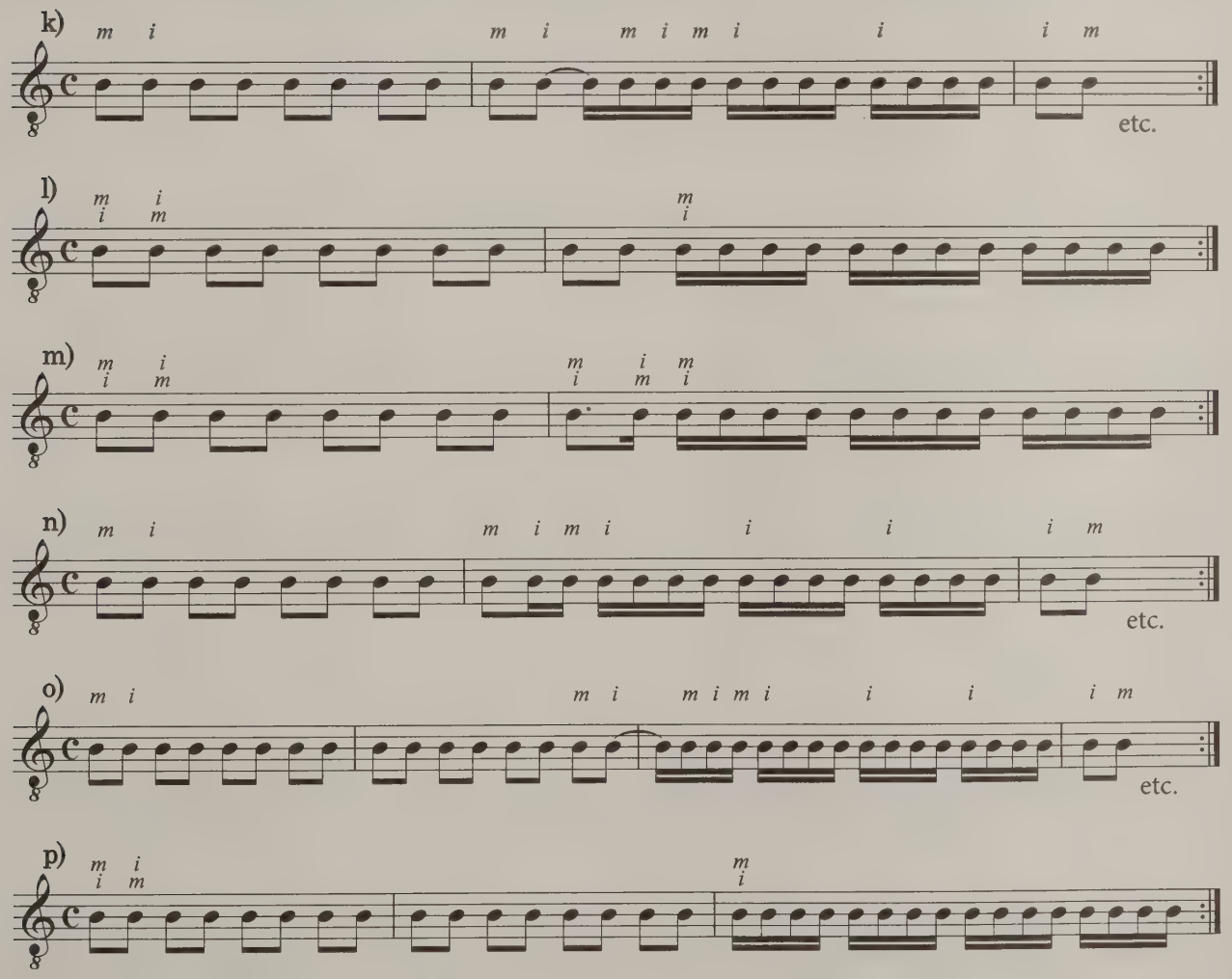


From here on (7k), you can easily loose control during the fast group of notes, which increases in size with each successive exercise. By expanding the slow group of notes by one bar, you can concentrate on the fast notes more.



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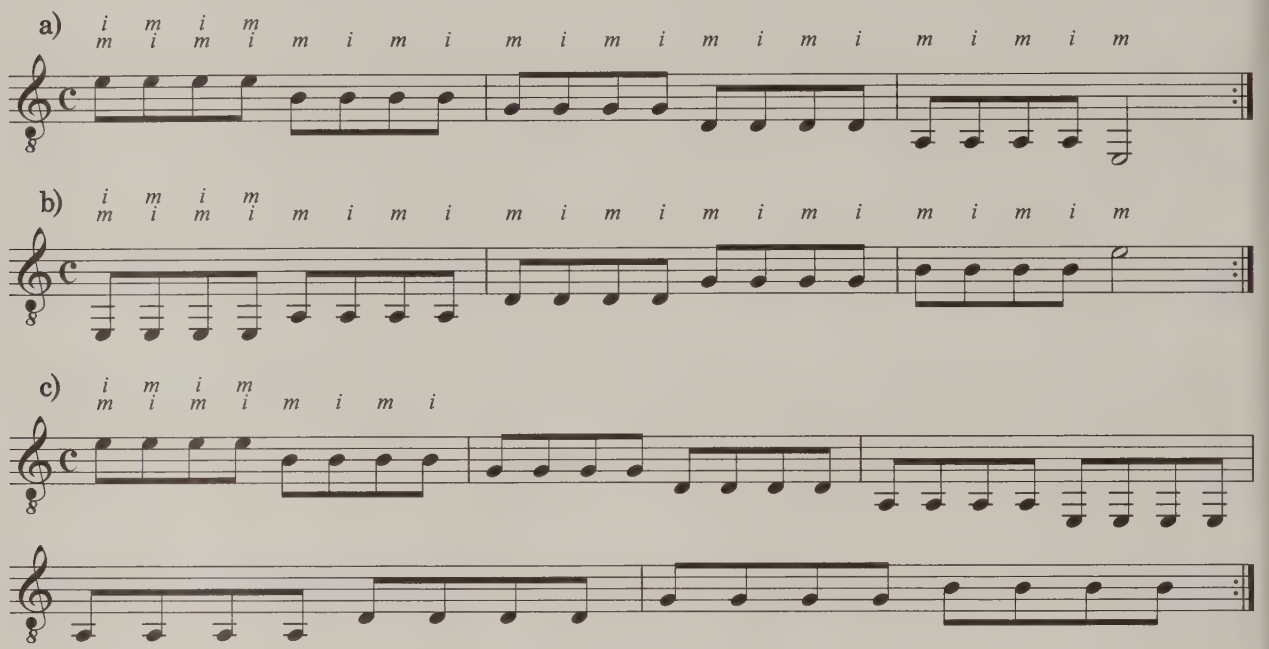
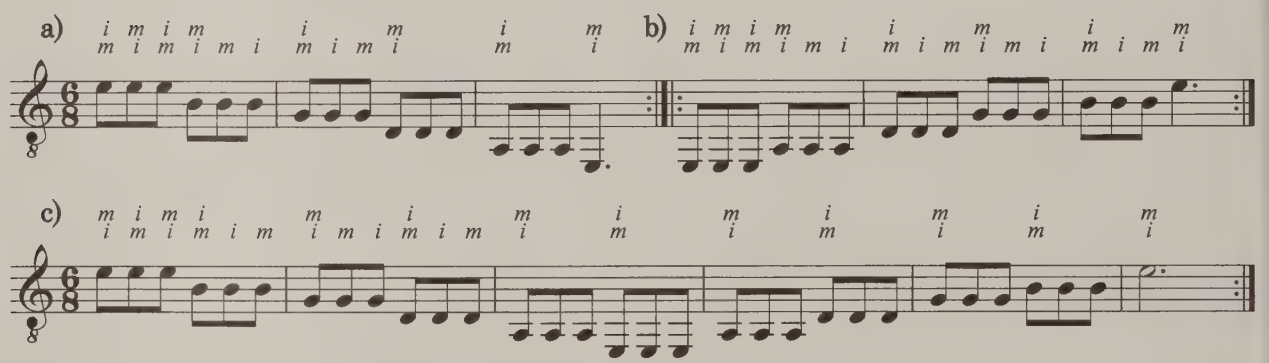
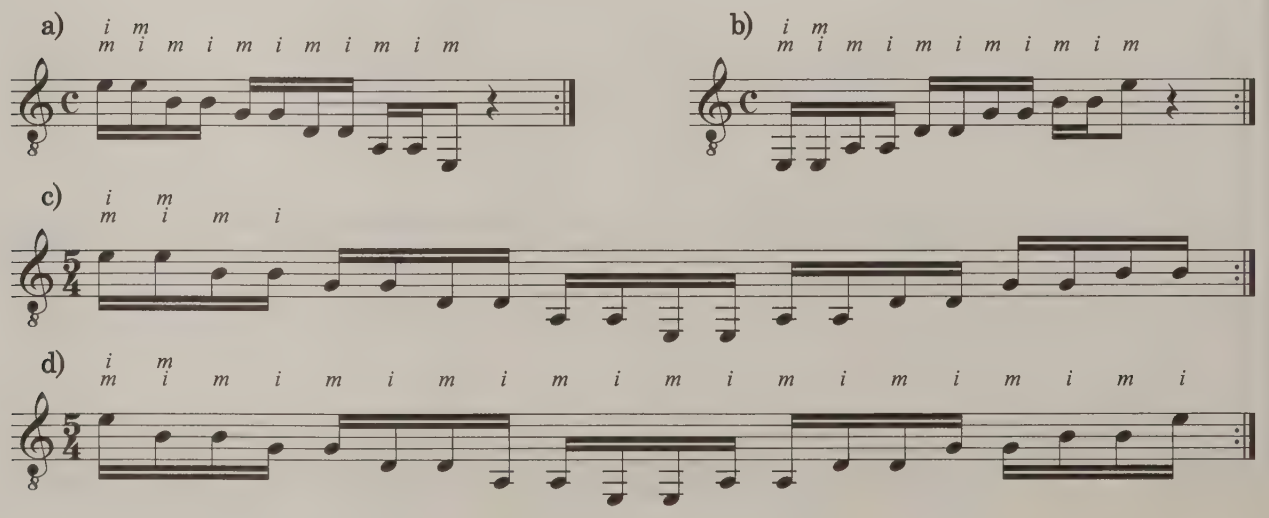
String Crossing Exercises

8 Having command of crossing strings with your RH, which constitutes the basic problem behind every scale and run, is the key to perfect scale and run technique. The following exercises – also with **m-a**, **a-m**, **i-a**, **a-i**, **p-i**, **i-p**, **p-m**, **m-p** – should be performed in apoyando but predominantly in tirando.



TIP 9 Be aware of shifting accents from **i** to **m** and its reverse!

10



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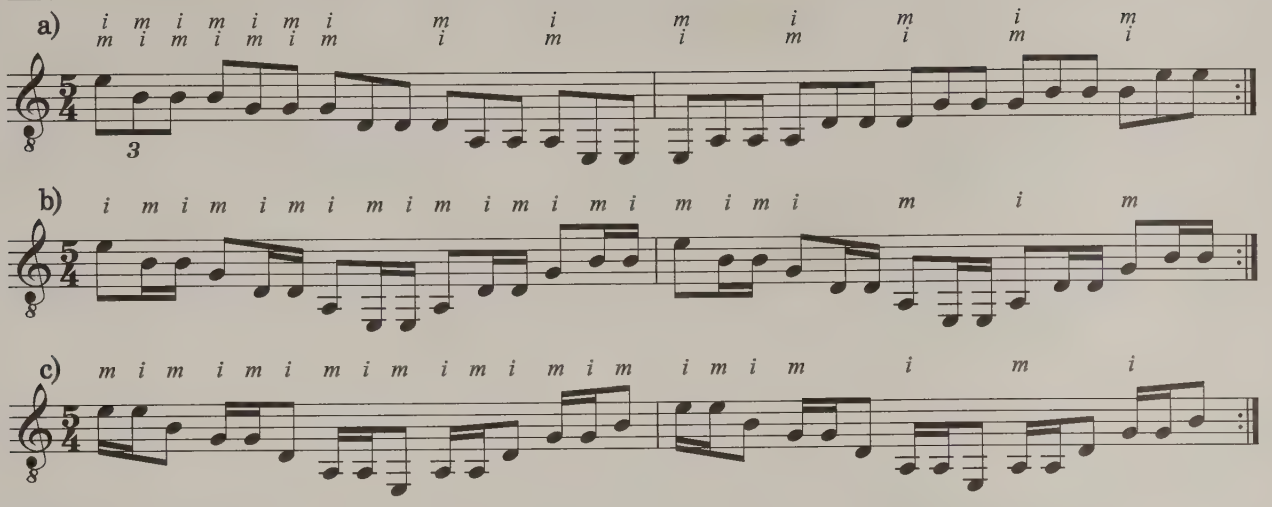
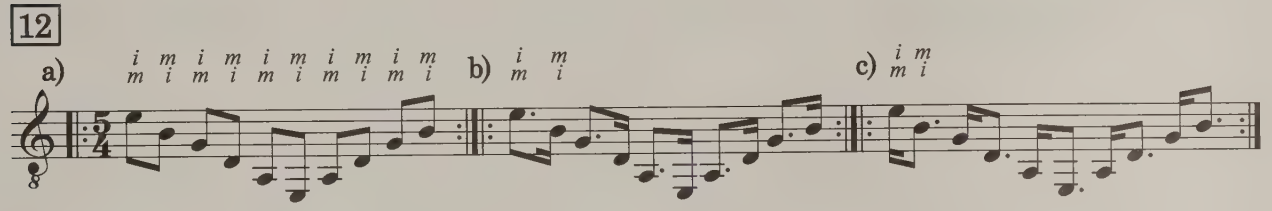
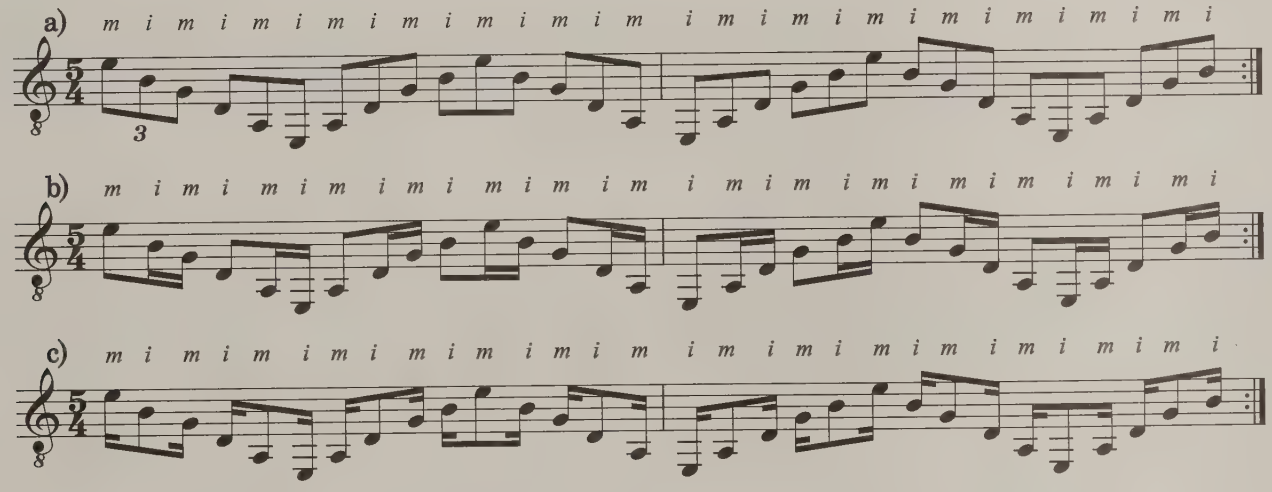
11



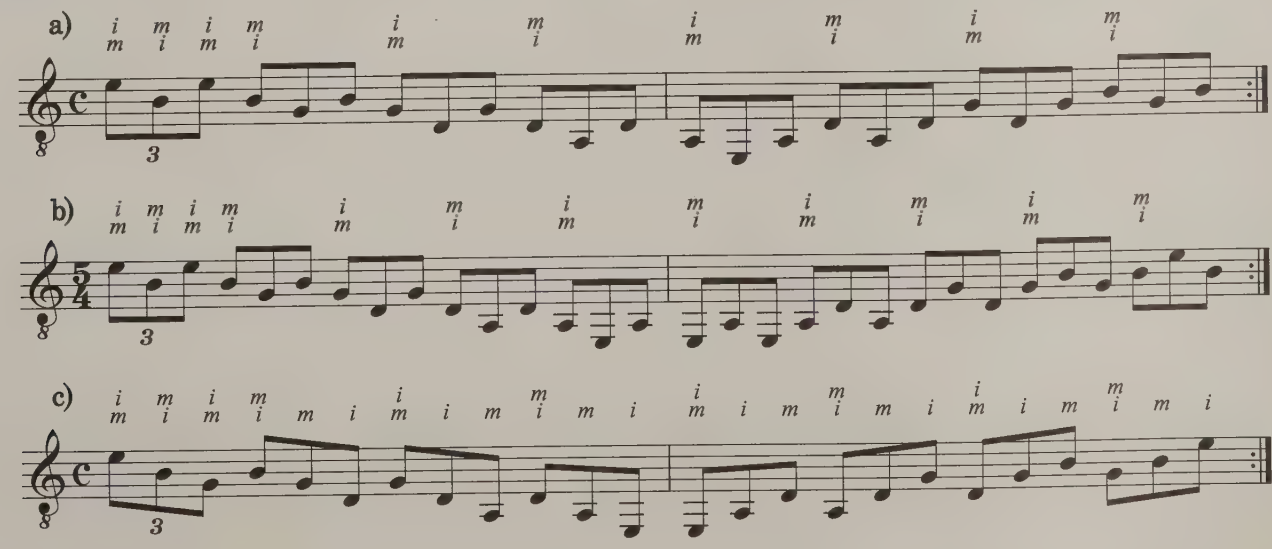
12



TIP 13



TIP 14



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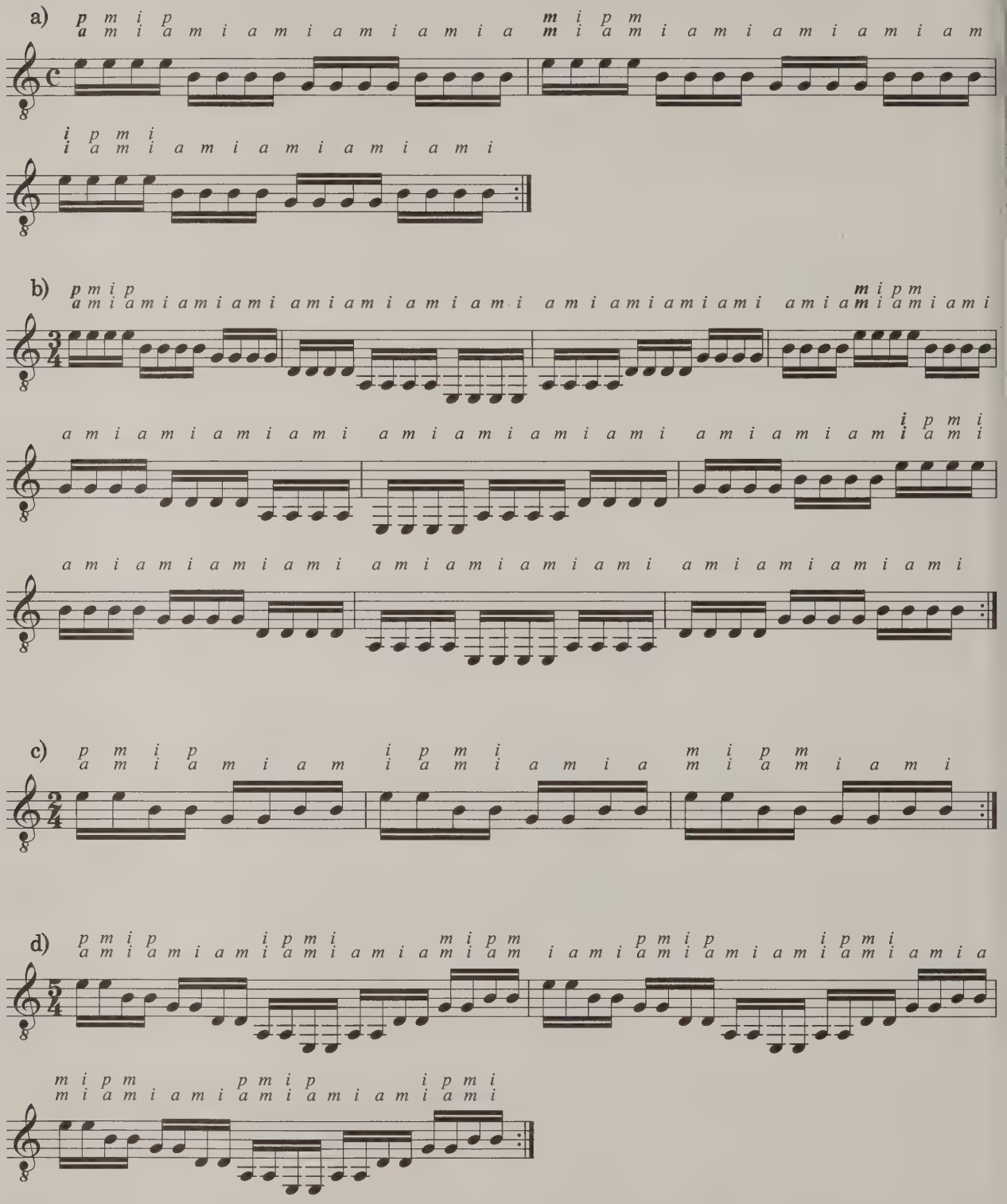
15 String crossing exercises using **a-m-i** and **p-m-i** increase the accuracy of the RH. The previous exercises Nos. 1–7 on a single string using **a-m-i** and **p-m-i**, are suited as preparatory exercises. 15a) is especially effective on the 2nd, 3rd and 4th strings.



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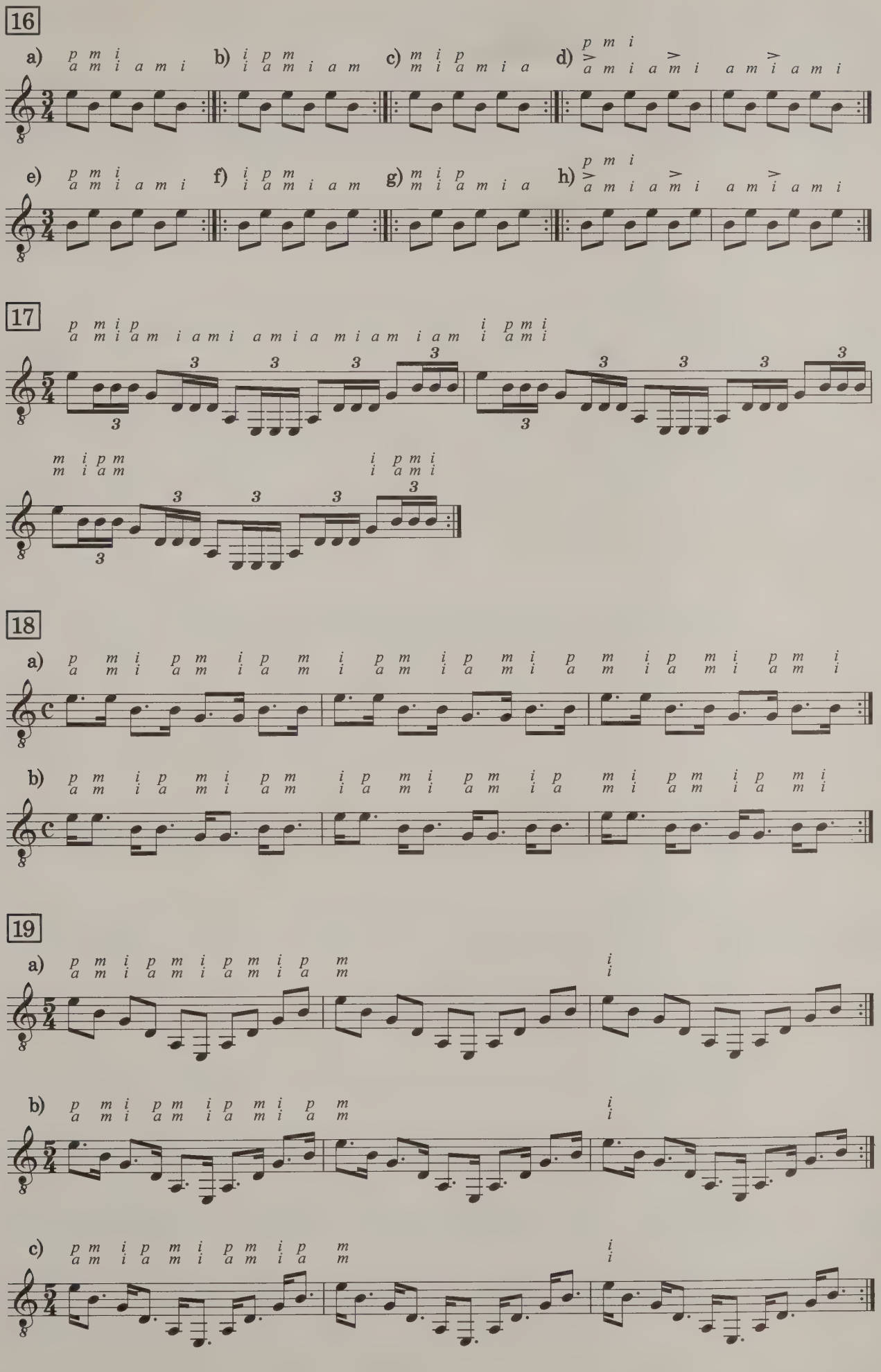
16
a) p m i a m i a m i
b) i p m i a m i a m
c) m i p m i a m i a
d) p m i a m i a m i a m i a m i
e) p m i a m i a m i
f) i p m i a m i a m
g) m i p m i a m i a
h) p m i a m i a m i a m i a m i
17
p m i p a m i a m i a m i a m i a m i a m i a m
i p m i i a m i
m i p m m i a m
i p m i i a m i
18
a) p m i p m i p m i p m i p m i p m i p m i p m i p m i
b) p m i p m i p m i p m i p m i p m i p m i p m i p m i
19
a) p m i p m i p m i p m i p m i
b) p m i p m i p m i p m i p m i
c) p m i p m i p m i p m i p m i

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Synchronization of Your Left and Right Hands – Exercises Using 2 Fingers from Each

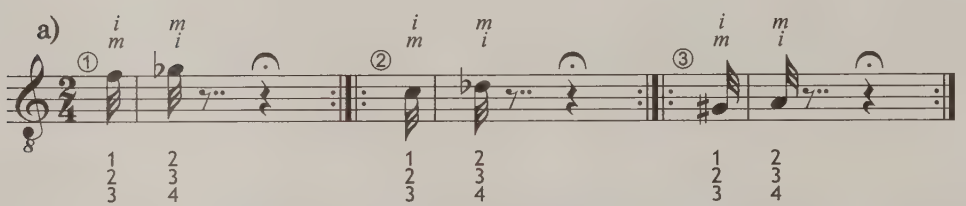
After speed exercises for the RH alone, now two fingers of the RH are going to be synchronized with two fingers of the LH, all on a single string. The next exercises, compiled from numerous options of combinations, should be varied as your practicing needs require to achieve sufficient variety in your practicing material. 6 ascending and 6 descending combinations emerge for the LH:

ascending: 1-2, 2-3, 3-4, 1-3, 1-4, 2-4
descending: 2-1, 3-2, 4-3, 3-1, 4-1, 4-2

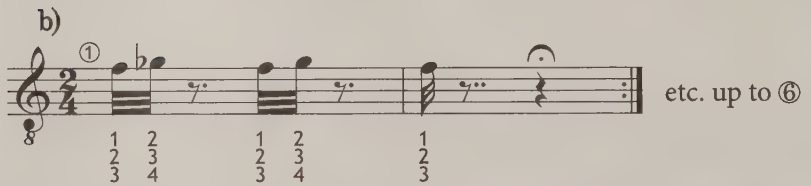
Pay attention to the synchronization of both hands. Play exercises 20 to 23 as fast as possible!

20

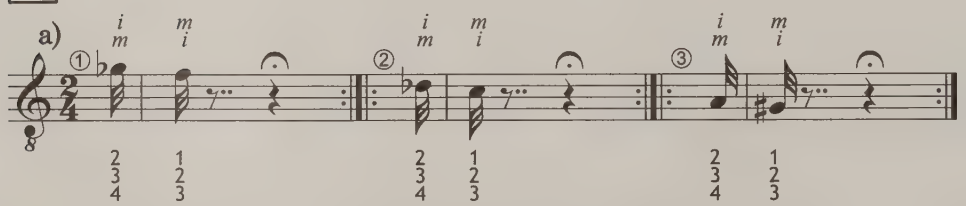
a)

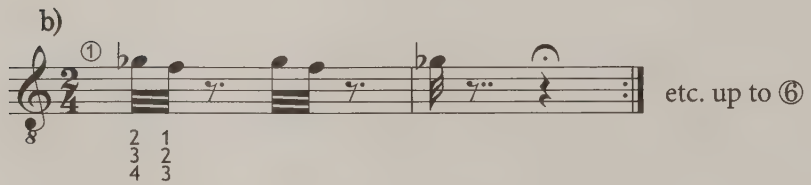


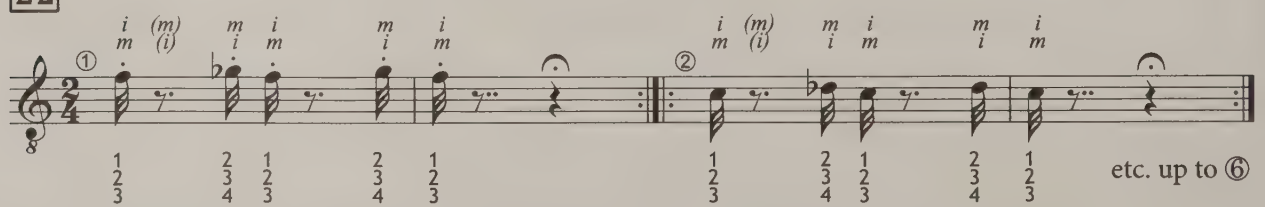
Practice with 1-3, 2-4 and 1-4 by changing the notes accordingly!

b)

Practice with 1-3, 2-4 and 1-4 by changing the notes accordingly!

21

a)

Practice with 3-1, 4-2 and 4-1 by changing the notes accordingly!

b)

Practice with 3-1, 4-2 and 4-1 by changing the notes accordingly!

22 With **m** or **i** (in parentheses), always mute immediately!

Practice with 1-3, 2-4 and 1-4 by changing the notes accordingly!

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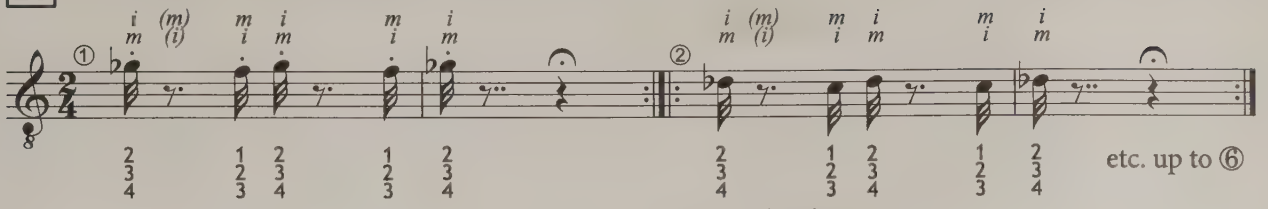
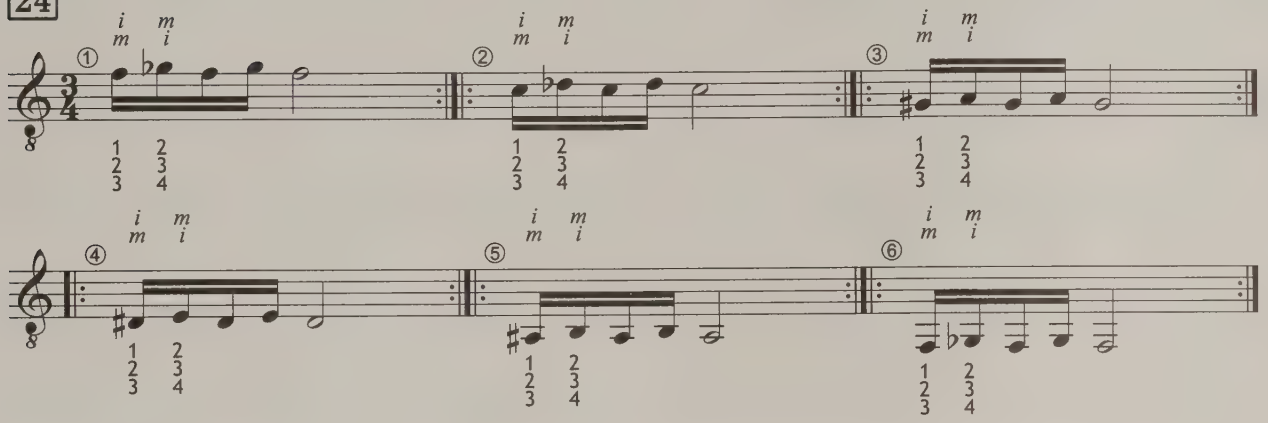
23 With **m** or **i** (in parentheses), always mute immediately!



Practice with 3-1, 4-2 and 4-1 by changing the notes accordingly!

24

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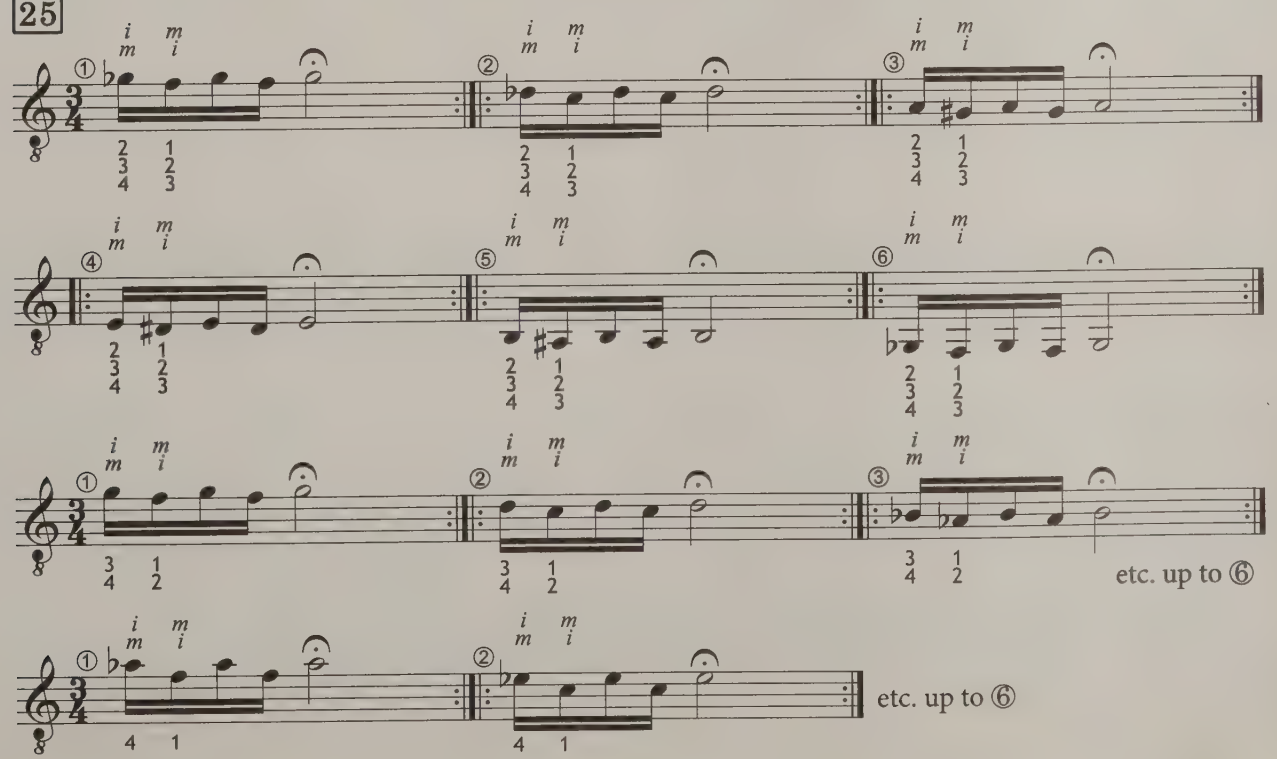

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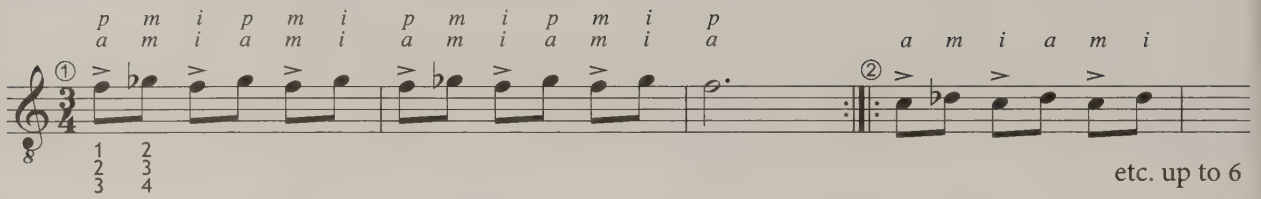
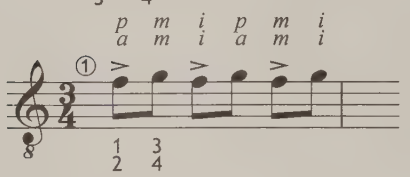
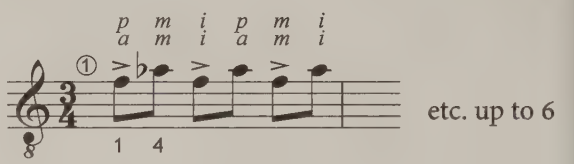
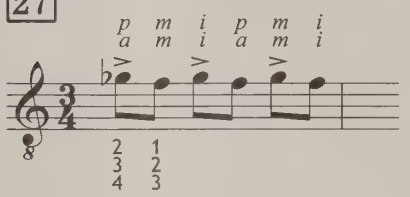
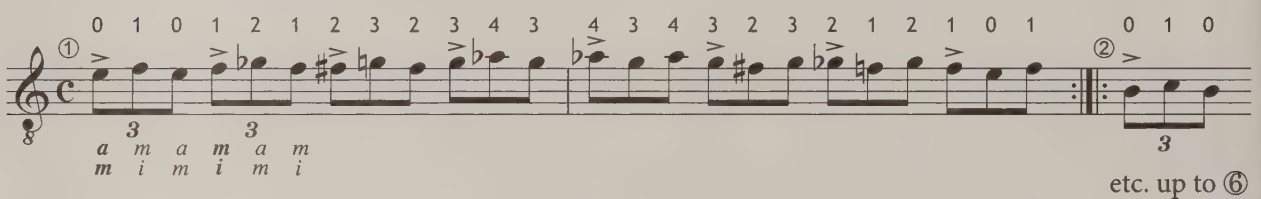
26 With 2 LH Fingers and 3 RH Fingers:

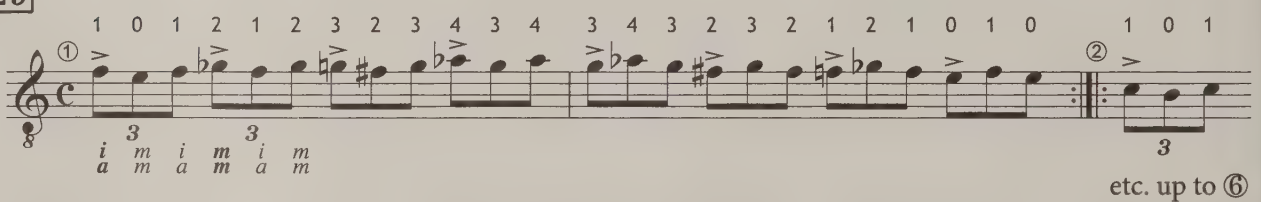


27

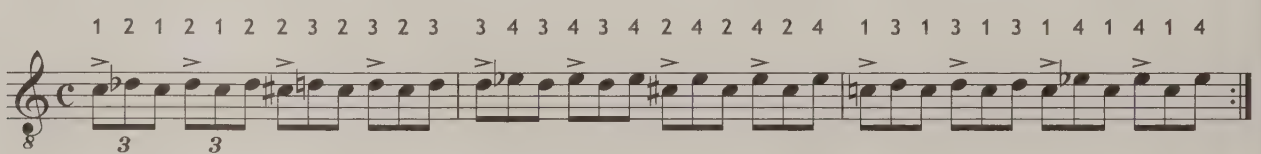


Practice with 3-1, 4-2 and 4-1 by changing the notes accordingly!

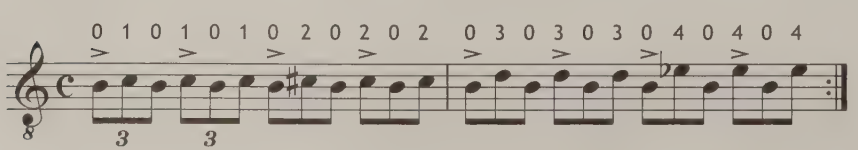
TIP **28** When synchronizing your hands with triplets, the accents change from **m** (**a**) to **i** (**m**).

TIP **29**



TIP **30** Practice on all strings and up to position IX! For the RH fingerings, see page 90.



31 Triplets on open strings. Practice on all strings and up to position IX! For the RH fingerings, see page 90.



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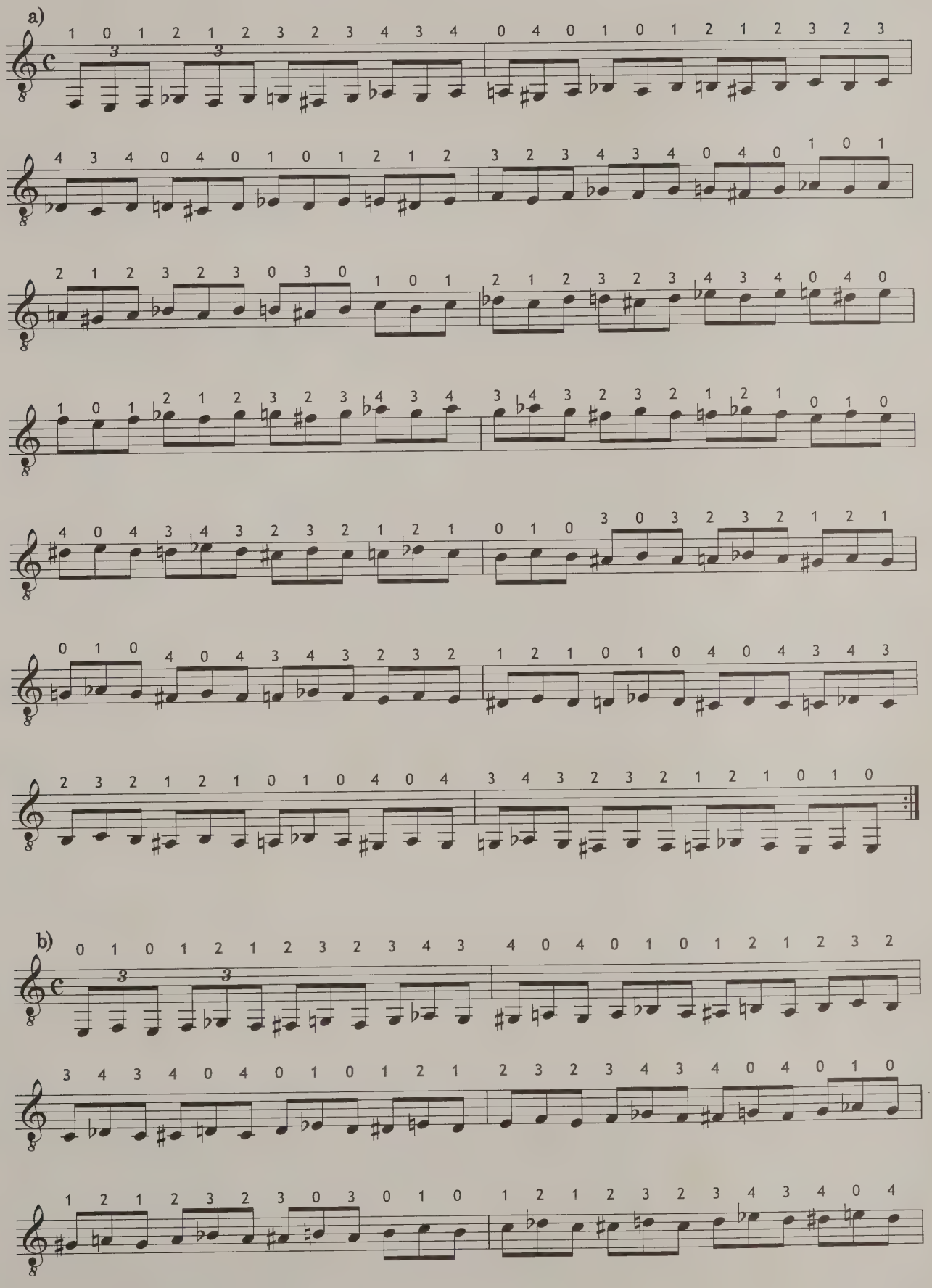
Chromatic Triplet Exercises over All Strings

TIP 32

Practice with:
m-i, i-m, a-m, m-a, i-a, a-i, p-i, i-p



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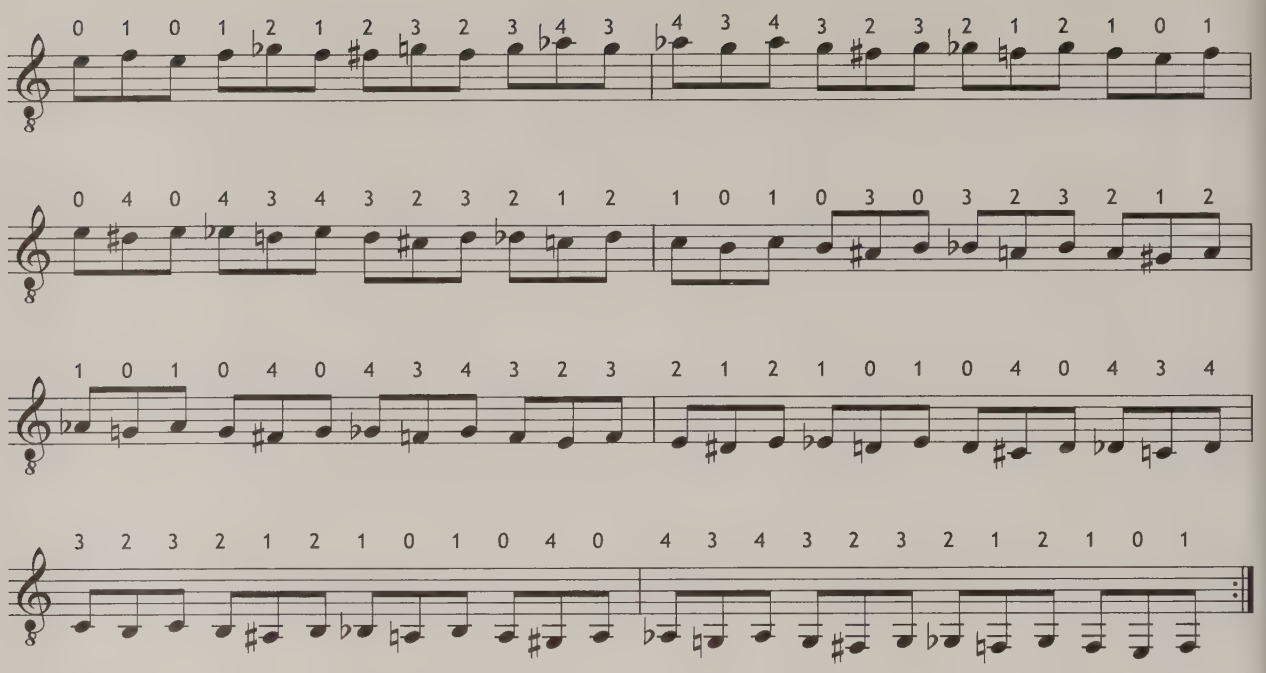
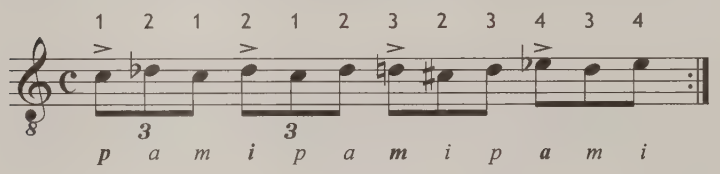
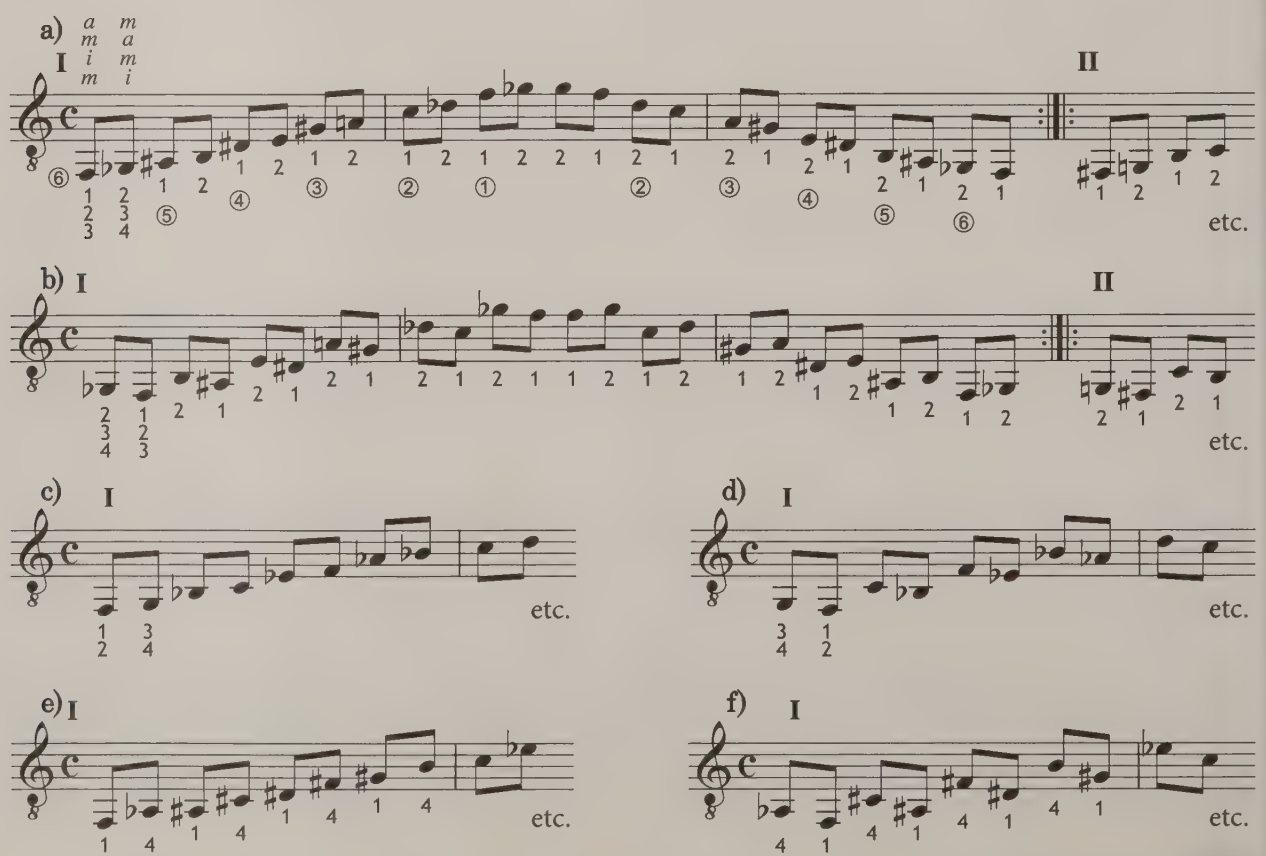


33 Practice on all strings and up to position IX!



Synchronization Exercises with String Crossings

34 The following selected exercises compiled from numerous options of combinations are a great challenge for both hands! Practice up to position IX.



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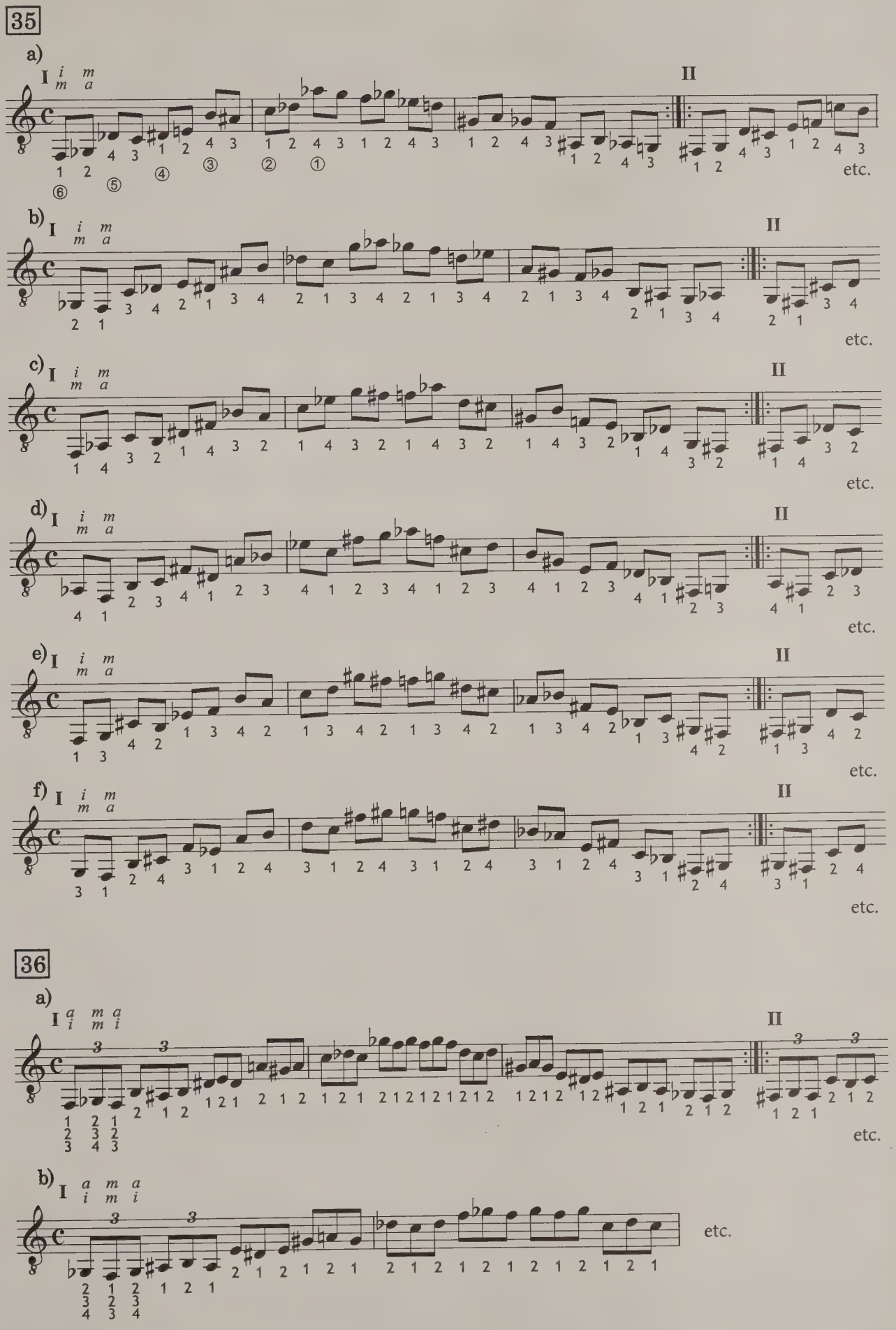

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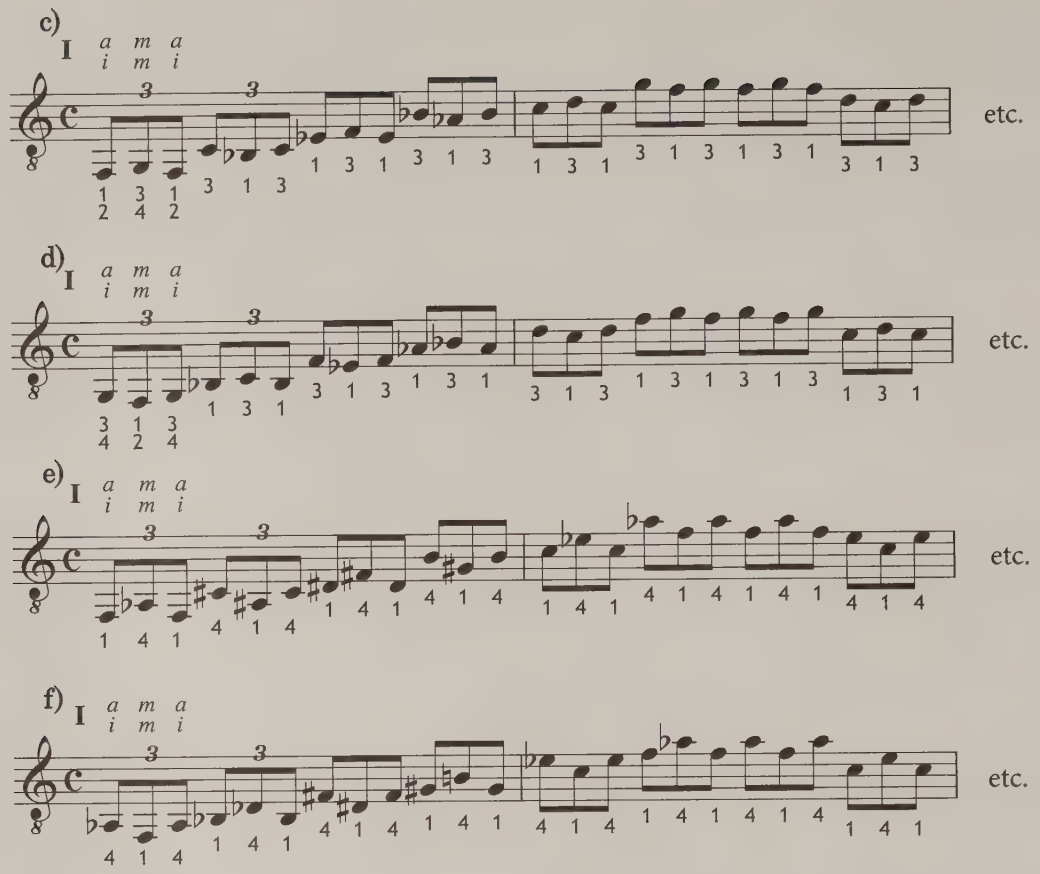
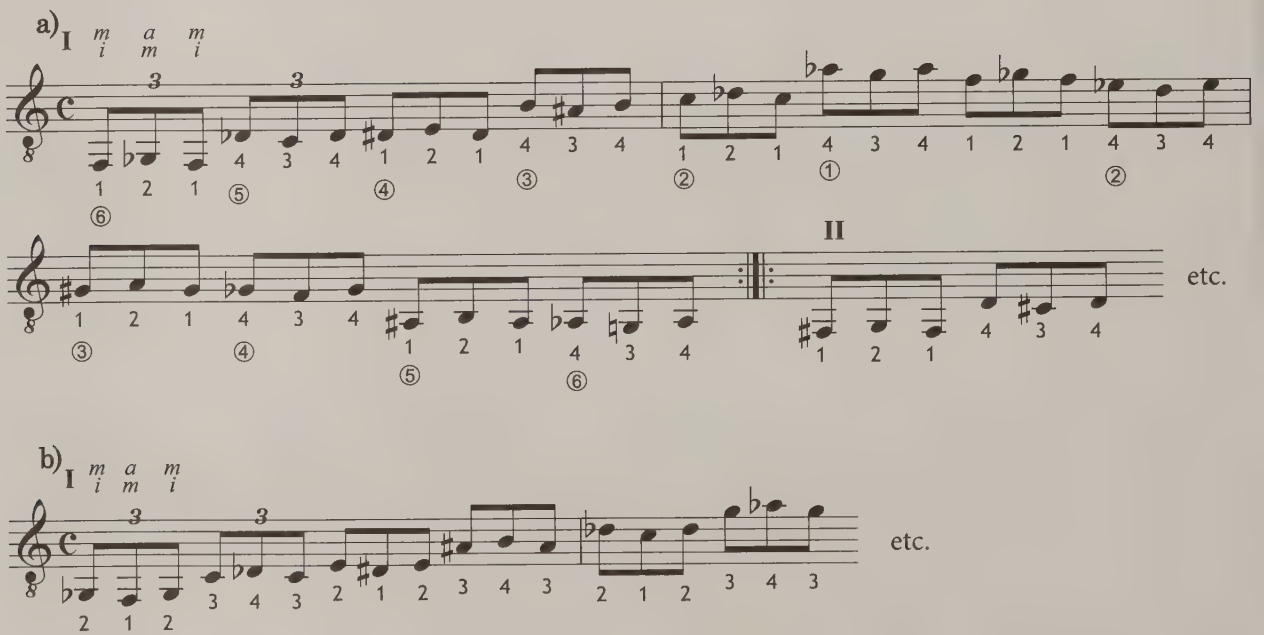


TIP 37

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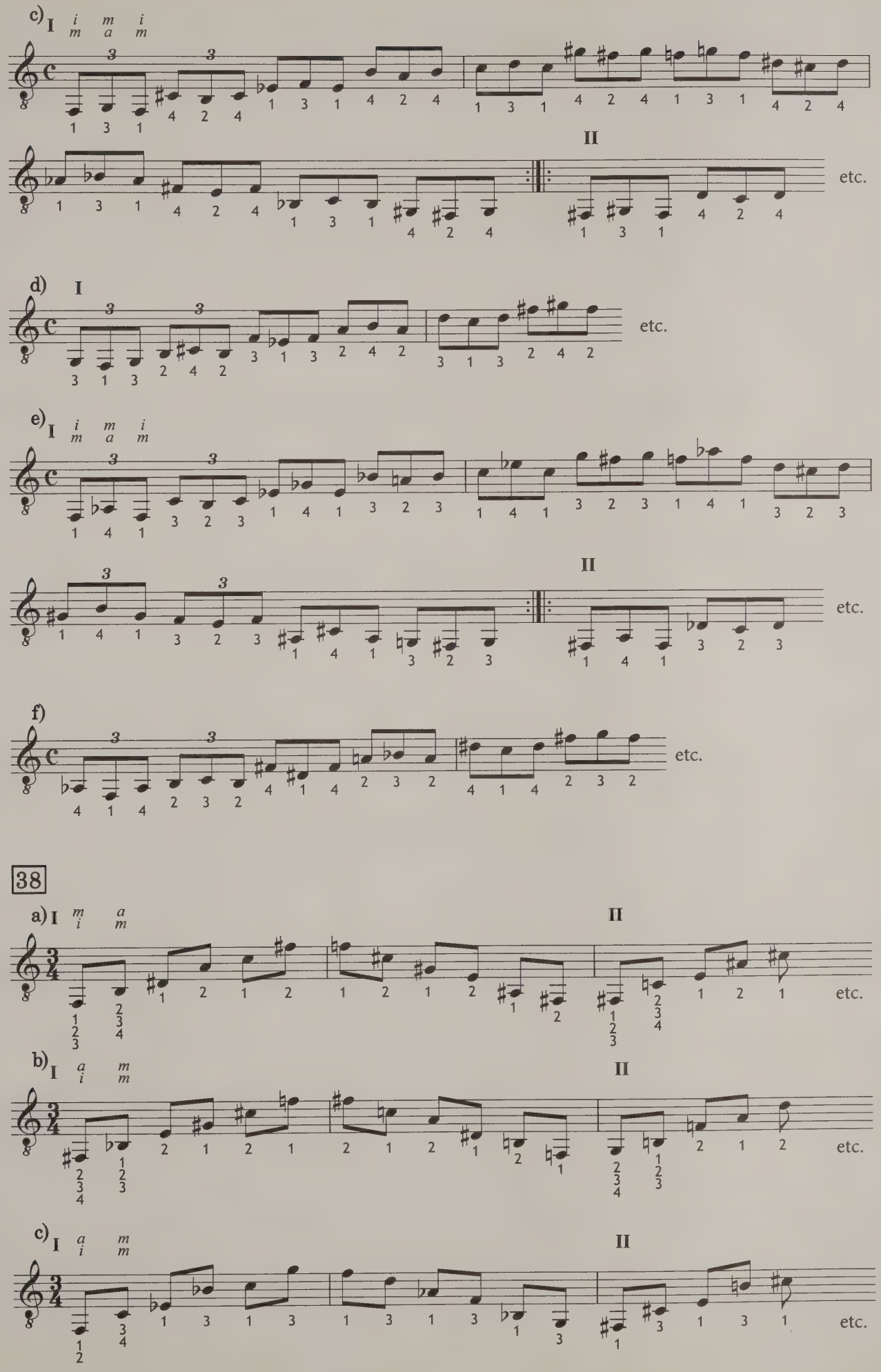

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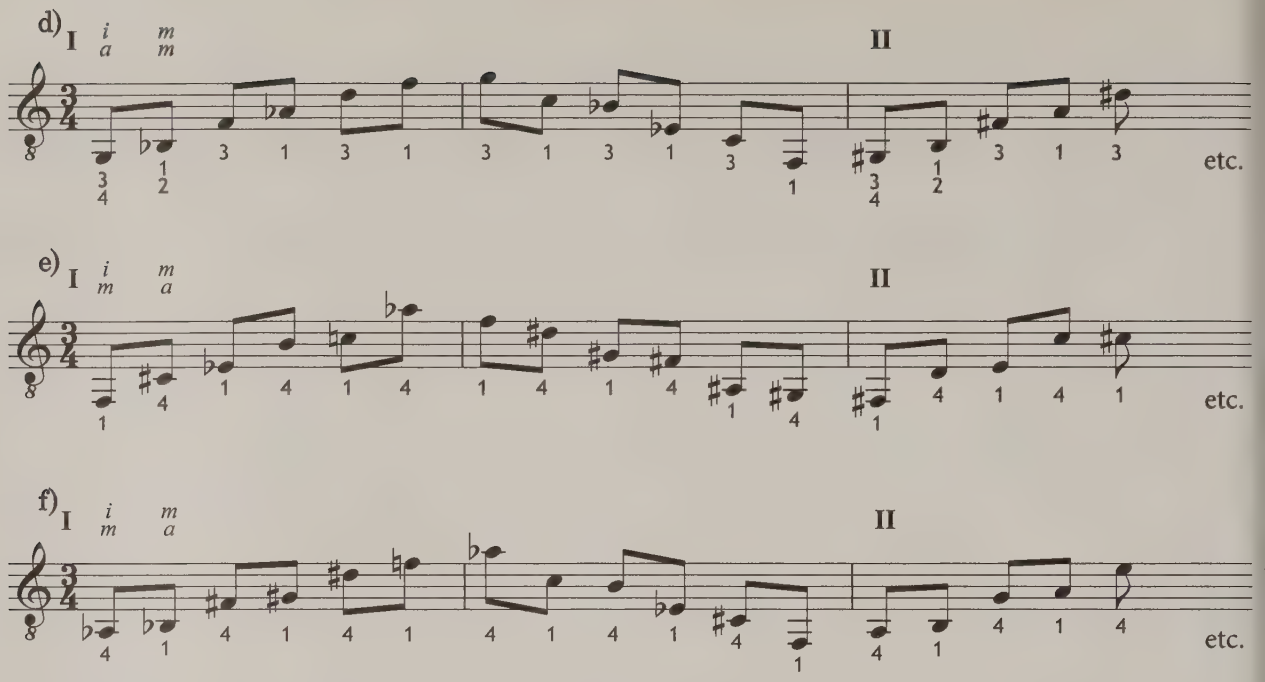
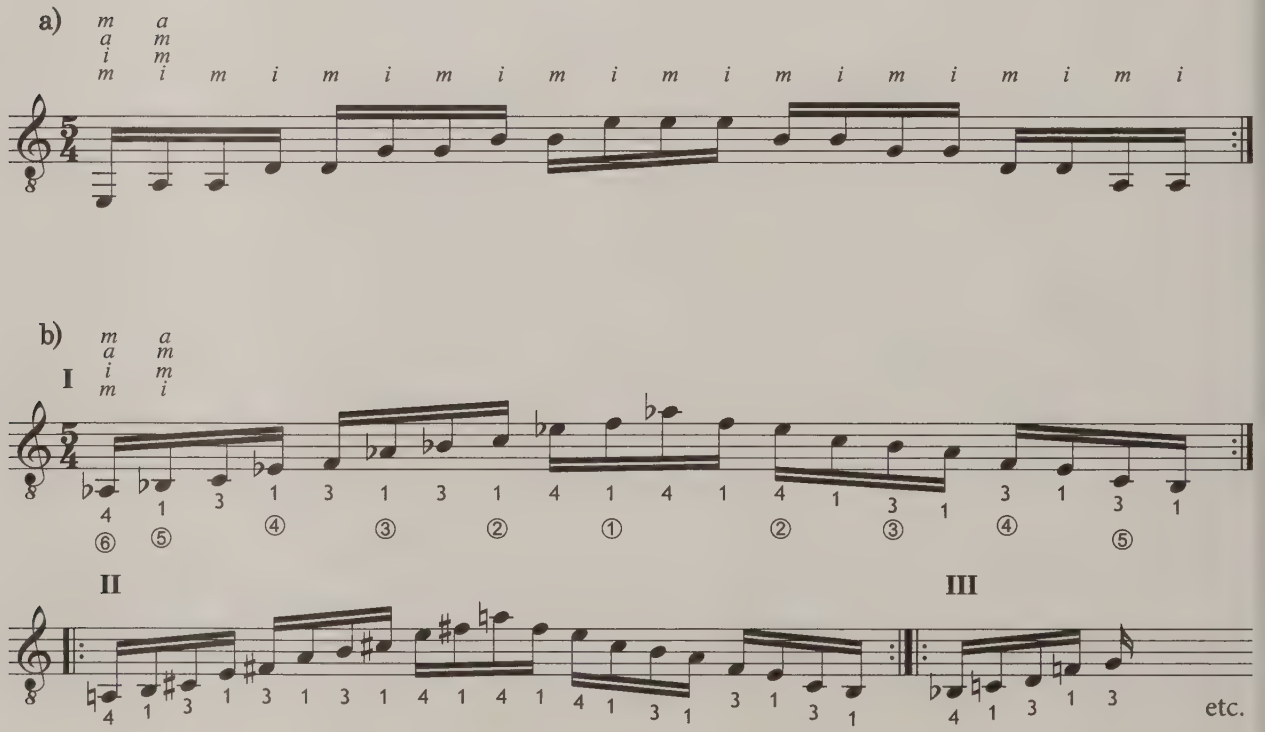

39 Exercise 39 is separated into two parts and should remind of you training your left and right hands separately. (See "Practical Examples for Single Scales and Runs," Exercises 13 and 14, p. 128, as well as "Practicing an Original Run...," p. 137.)



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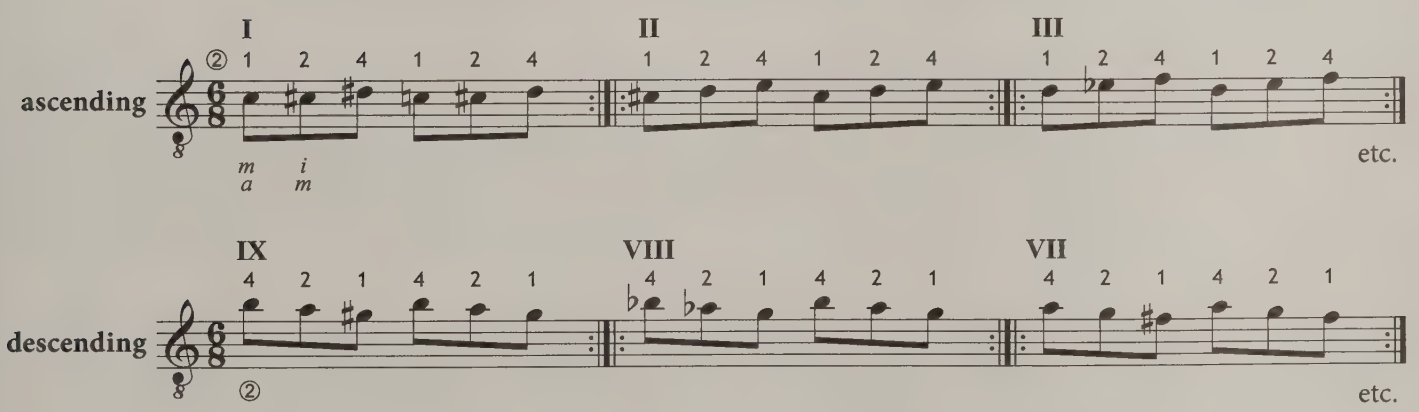
Synchronization of 3 Fingers of the LH / 2 and 3 Fingers of the RH

40 The possible combinations of 3 LH fingers results in 4 groups (4 × 6 three finger combinations) which are presented in a clearly structured list of the leading combinations ascending from position I to IX and descending from position IX to I. Practice them on all strings, particularly though on the 2nd and 3rd strings.
Your focus should be on the combinations 124 and 134 as they constitute the fundamental building blocks for all scale-like runs and sequences of notes. See also "Preparatory Studies for Scales and Runs" on page 115.

	from position I to IX ASCENDING	from position IX to I DESCENDING
Group 1	1 2 4	4 2 1
	2 4 1	1 4 2
	4 1 2	2 1 4
Group 2	1 3 4	4 3 1
	3 4 1	1 4 3
	4 1 3	3 1 4
Group 3	1 2 3	3 2 1
	2 3 1	1 3 2
	3 1 2	2 1 3
Group 4	2 3 4	4 3 2
	3 4 2	2 4 3
	4 2 3	3 2 4

Example exercises with all 6 combinations in Group 1.
The RH patterns using 2 fingers, **m-i – i-m, a-m – m-a, p-i – i-p, i-a – a-i**, result in alternating accents.
Practice the patterns using **a-m-i** and **p-m-i** as well.



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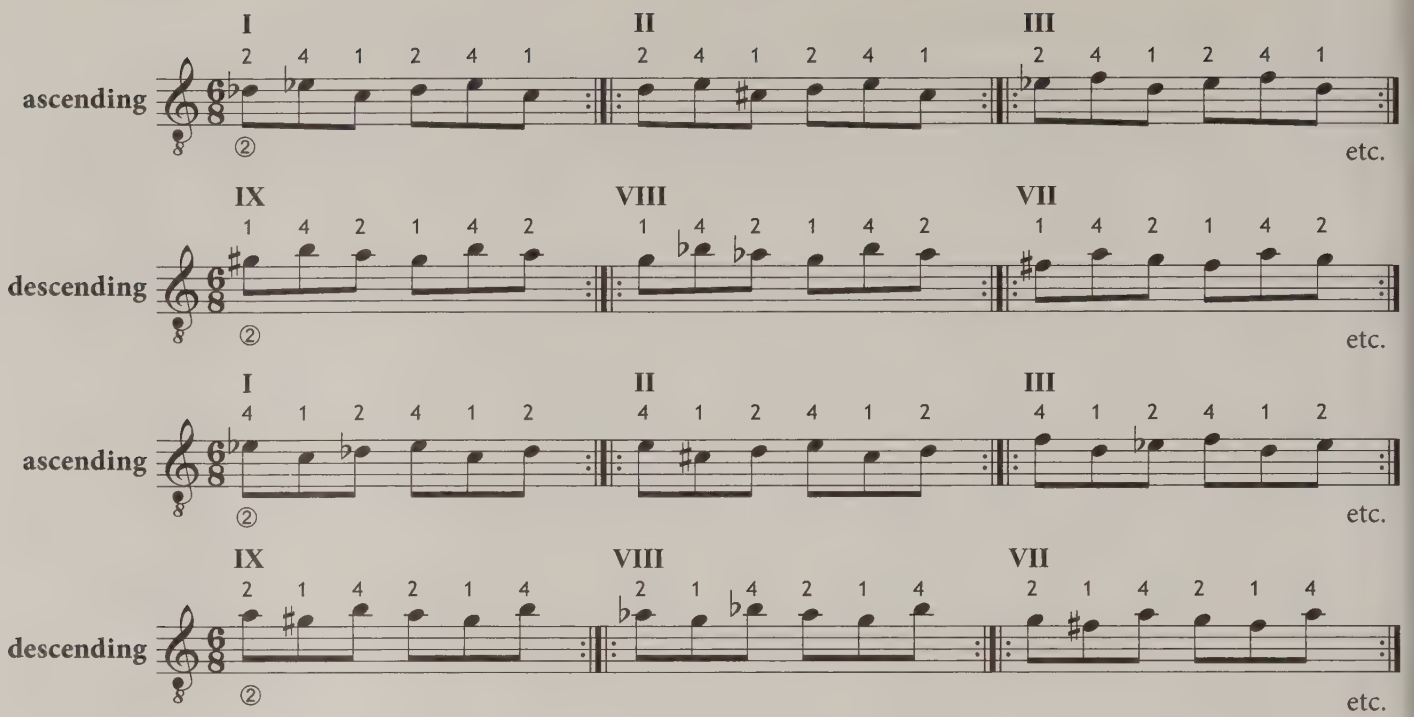
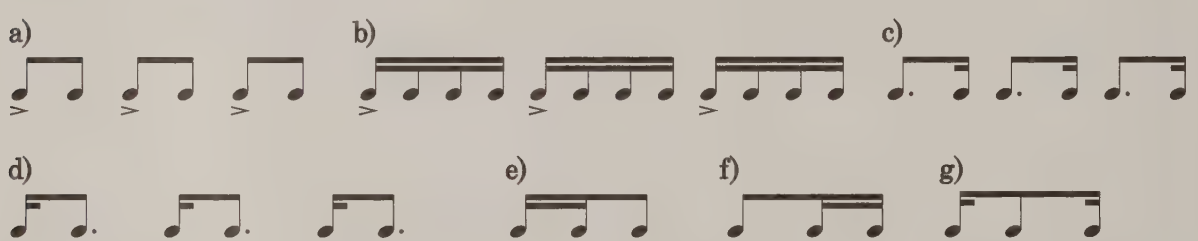

Practice exercise 40 with the following rhythms and accents:

Synchronization of 4 Fingers of the LH / 2 and 3 Fingers of the RH (24 Permutations)

41 One of the highest degrees of synchronization between both hands is required to practice the 24 permutations of the fingers of the LH, which, in addition, also promotes the independence of the fingers of the LH. Separated into 4 groups of 6 each, the following combinations can be practiced on all strings, but preferentially on the 2nd and 3rd (to avoid the wear and tear of your nails on the bass strings).

‖: 1 2 3 4 :‖	‖: 2 1 3 4 :‖	‖: 3 1 2 4 :‖	‖: 4 1 2 3 :‖
‖: 1 2 4 3 :‖	‖: 2 1 4 3 :‖	‖: 3 1 4 2 :‖	‖: 4 1 3 2 :‖
‖: 1 3 2 4 :‖	‖: 2 3 1 4 :‖	‖: 3 2 1 4 :‖	‖: 4 2 3 1 :‖
‖: 1 3 4 2 :‖	‖: 2 3 4 1 :‖	‖: 3 2 4 1 :‖	‖: 4 2 1 3 :‖
‖: 1 4 2 3 :‖	‖: 2 4 1 3 :‖	‖: 3 4 2 1 :‖	‖: 4 3 1 2 :‖
‖: 1 4 3 2 :‖	‖: 2 4 3 1 :‖	‖: 3 4 1 2 :‖	‖: 4 3 2 1 :‖

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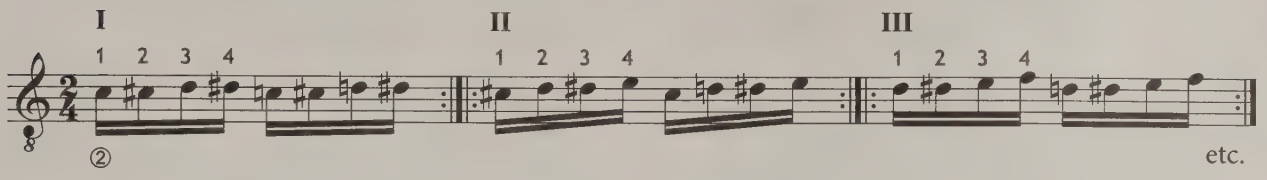
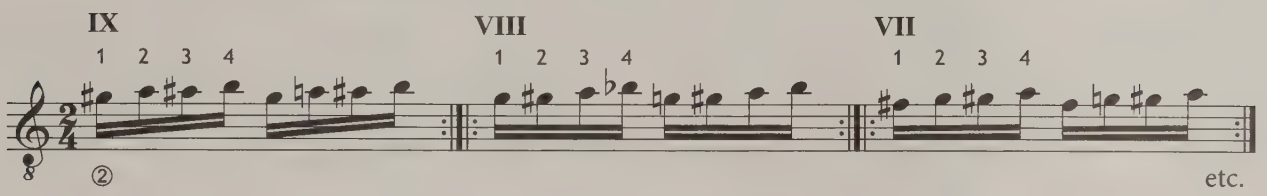
In the same way, just as many combinations for the fingers of the RH (p-a-m-i) can be generated. Nevertheless, it is recommended to first practice the specific combinations **m-i**, **i-m**, **m-a**, **a-m**, **a-i**, **i-a**, **p-i**, **i-p**, **m-p**, **p-m** and at an advanced state, a three finger pattern, i.e. **a-m-i**, **i-m-a**, **p-m-i**, **p-i-m** and its inversions **m-i-a**, **i-a-m** etc.

Example exercise:

Practice ascending from position I to position IX.

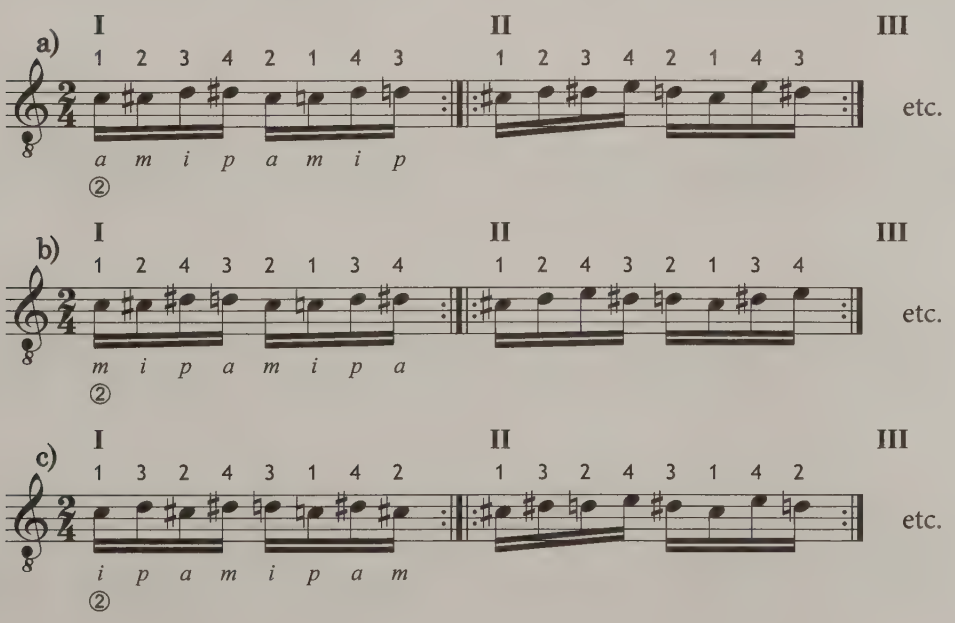


Practice descending from position IX to position I.



Synchronization of 4 Fingers of Both the Left and Right Hands (8 Note Permutation)

TIP 42

Two groups of 4 notes (2 permutations) generate 12 combinations. By synchronizing 4 fingers of the right and left hands, further complex exercises emerge to help you improve the synchronization of your hands. Here it makes sense to use common RH patterns such as the tremolo pattern (see "V. Tremolo," p. 161). You should use each finger to start the pattern: **a-m-i-p**, **m-i-p-a**, **i-p-a-m**, **p-a-m-i**, see a)–d).
The basic pattern **p-i-m-a** and its variations **i-m-a-p, m-a-p-i, a-p-i-m**, see e)–h), are equally suited as well as all the remaining 4 finger patterns of the RH.
Practice on all strings but preferentially on the 2nd and 3rd strings.

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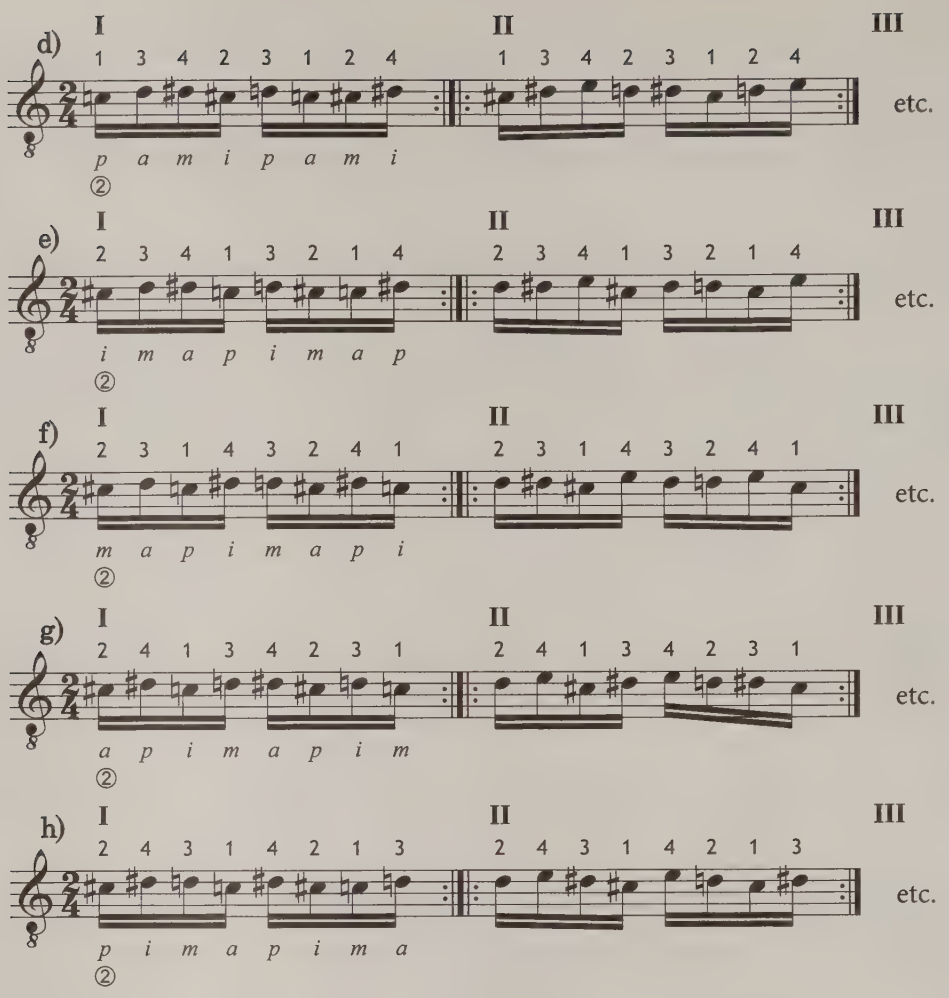
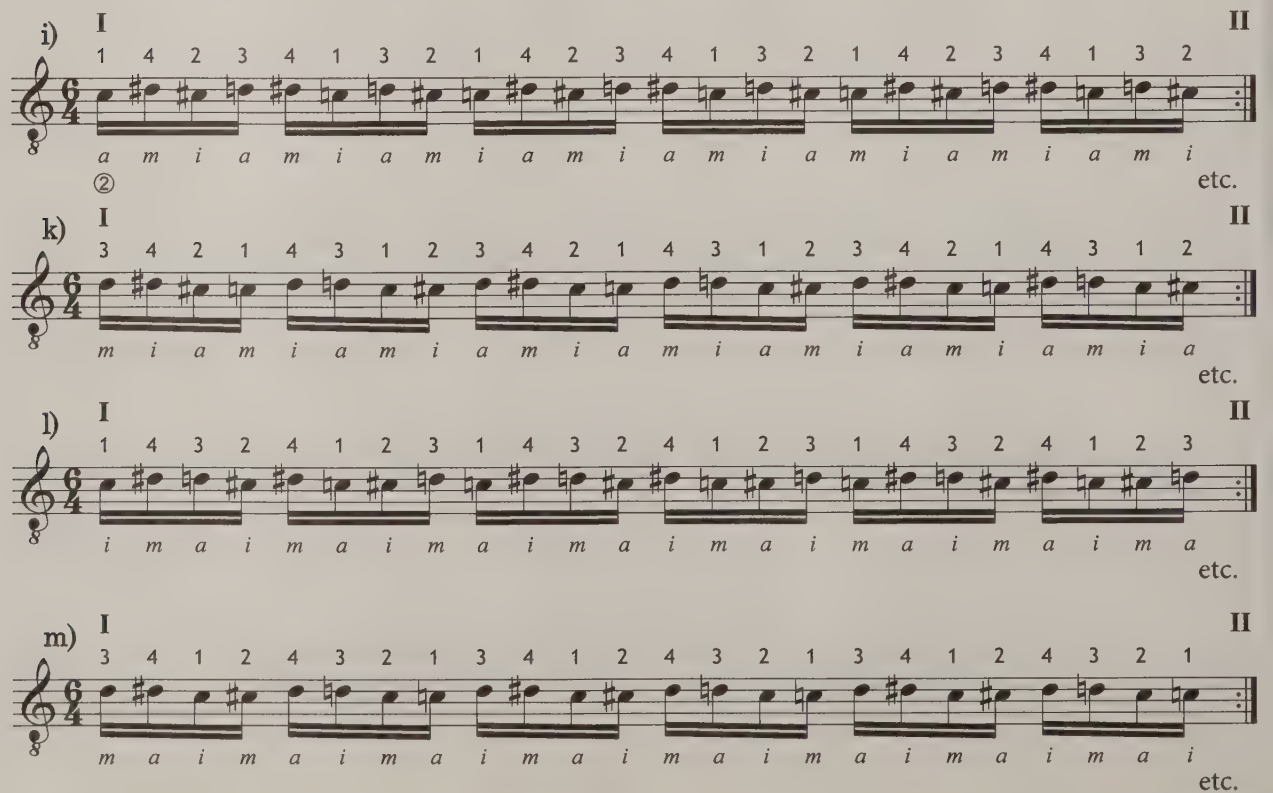

The following 4 combinations i)–m) are synchronization exercises using 3 RH and 4 LH fingers. With 2 patterns of alternating three finger combinations **a-m-i** (**m-i-a**) and **i-m-a** (**m-a-i**) more different variarions are created. Here an eight note pattern is repeated three times in order to get back to your starting finger.


i)
I
II
1 4 2 3 4 1 3 2 1 4 2 3 4 1 3 2 1 4 2 3 4 1 3 2
a m i a m i a m i a m i a m i a m i a m i a m i
②
etc.
k)
3 4 2 1 4 3 1 2 3 4 2 1 4 3 1 2 3 4 2 1 4 3 1 2
m i a m i a m i a m i a m i a m i a m i a m i a
etc.
l)
1 4 3 2 4 1 2 3 1 4 3 2 4 1 2 3 1 4 3 2 4 1 2 3
i m a i m a i m a i m a i m a i m a i m a i m a
etc.
m)
3 4 1 2 4 3 2 1 3 4 1 2 4 3 2 1 3 4 1 2 4 3 2 1
m a i m a i m a i m a i m a i m a i m a i m a i
etc.

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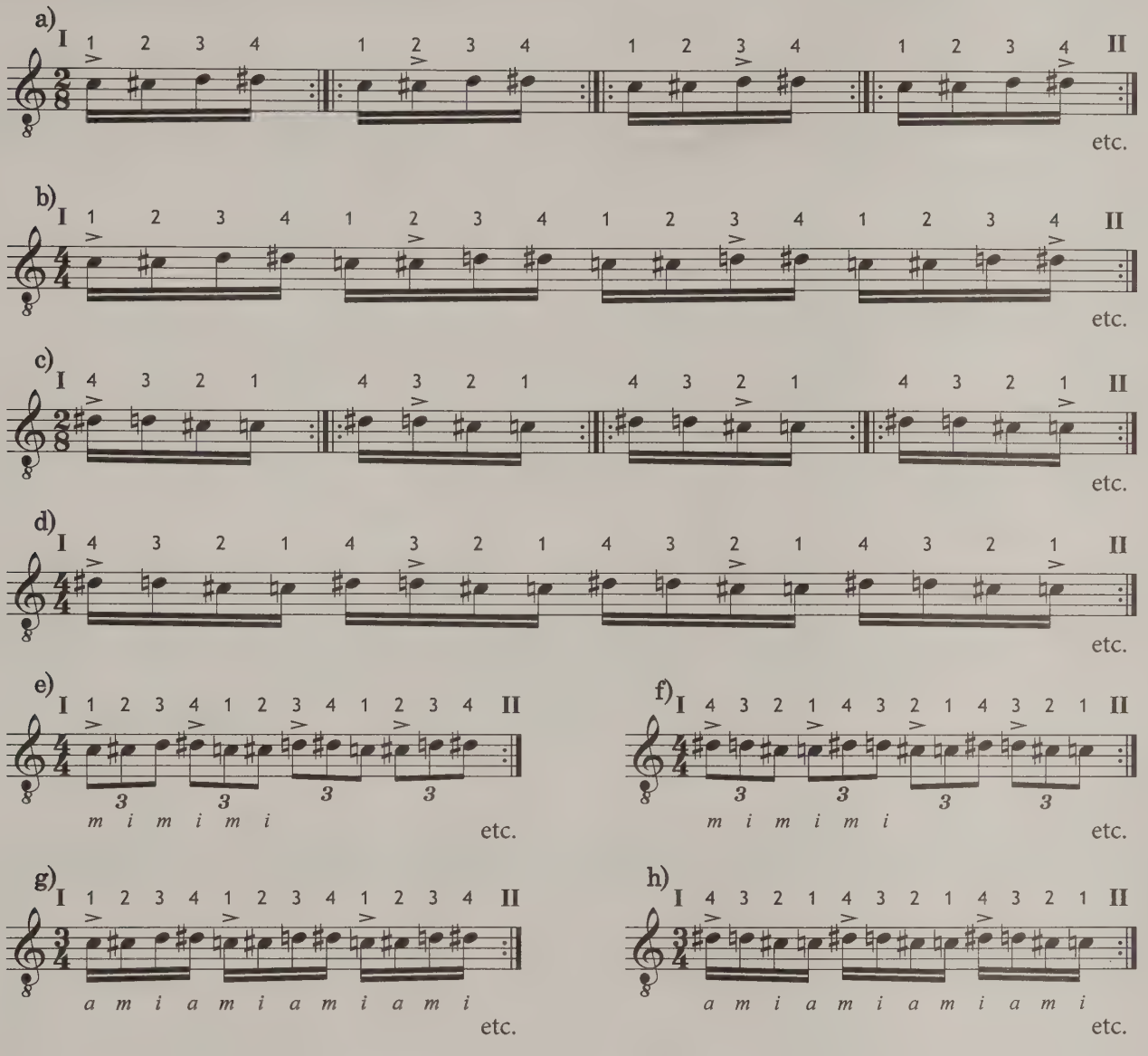
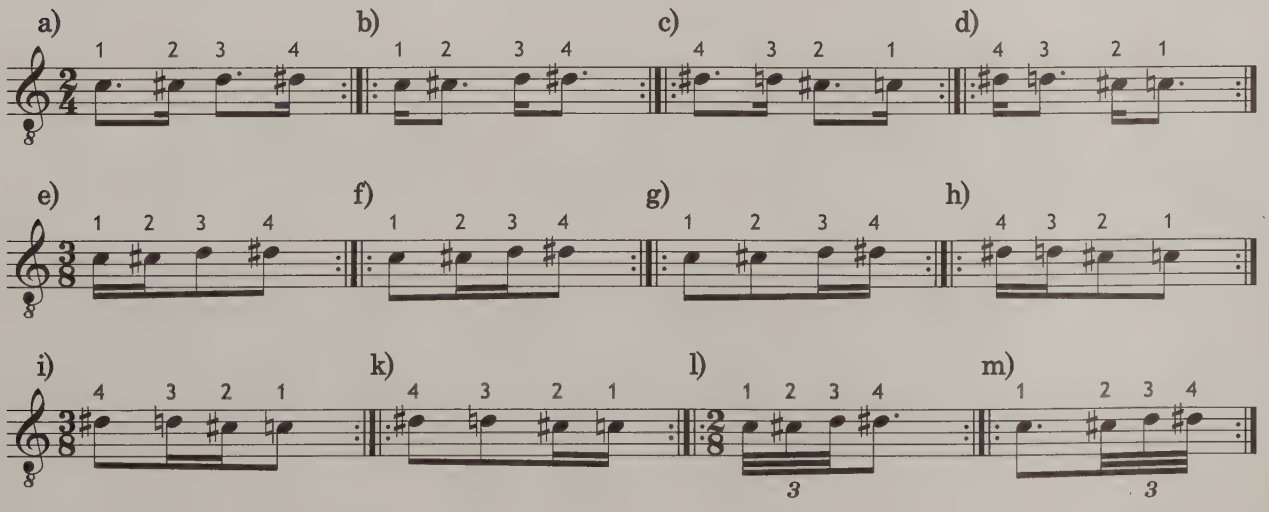
43 Intensive Training of the Chromatic Permutations 1 2 3 4 and 4 3 2 1

With various accents:



With various rhythms:

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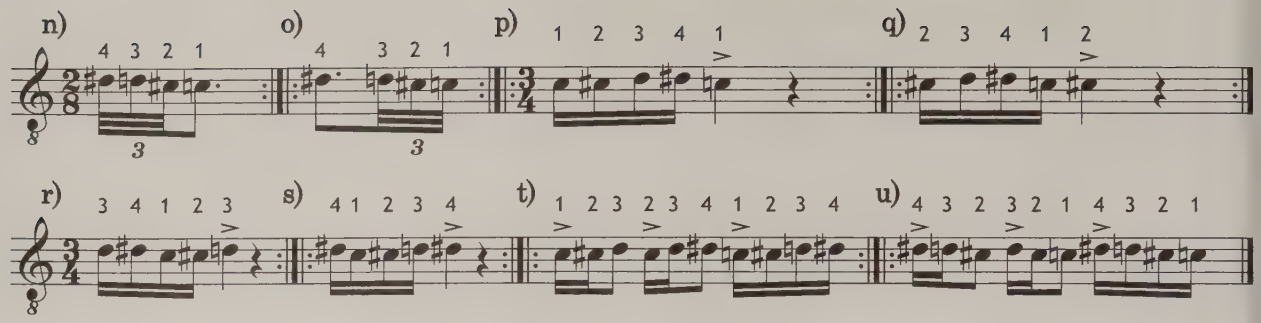
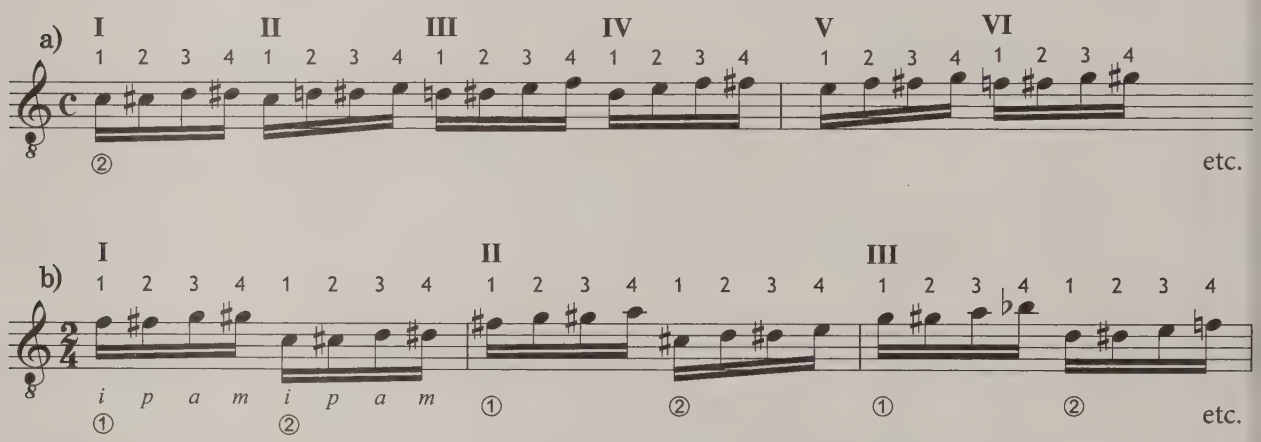


Various Coordination Exercises

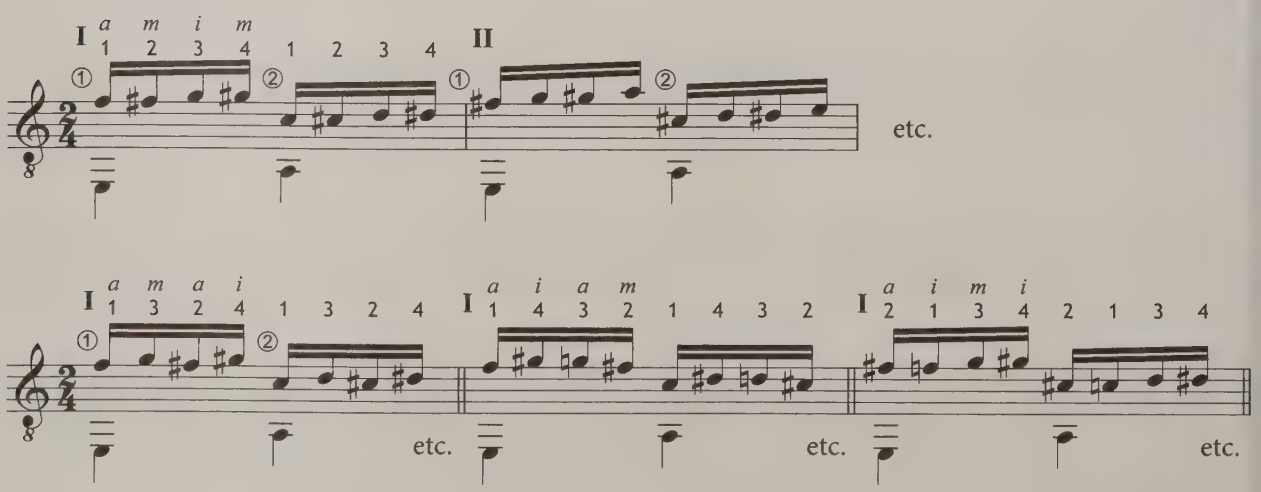
The following exercises, in part with a high degree of difficulty, should serve as a model for you to create self-conceived exercises which are necessary when solving the problems regarding various requirements of LH and RH synchronization.

44 Practice all 24 combinations, see exercise 41 on page 108.



45 **12 Basic RH Arpeggio Patterns with 24 LH Permutations (Two-Part)**

Examples:



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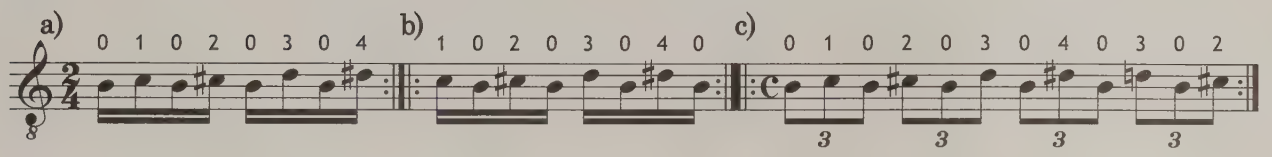
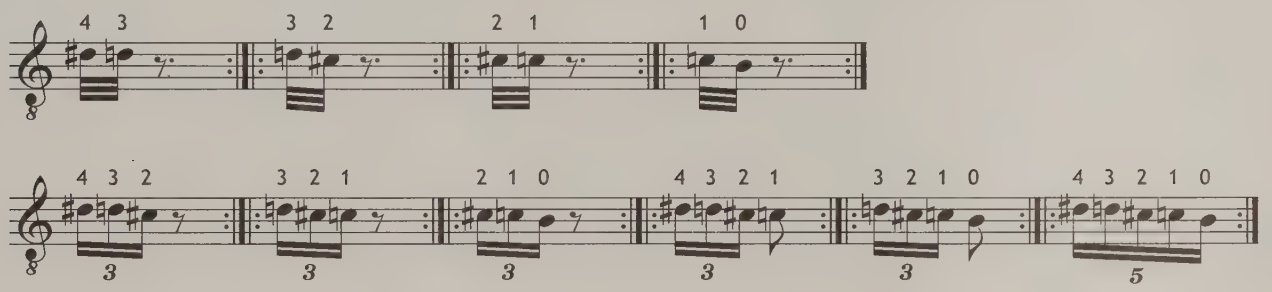
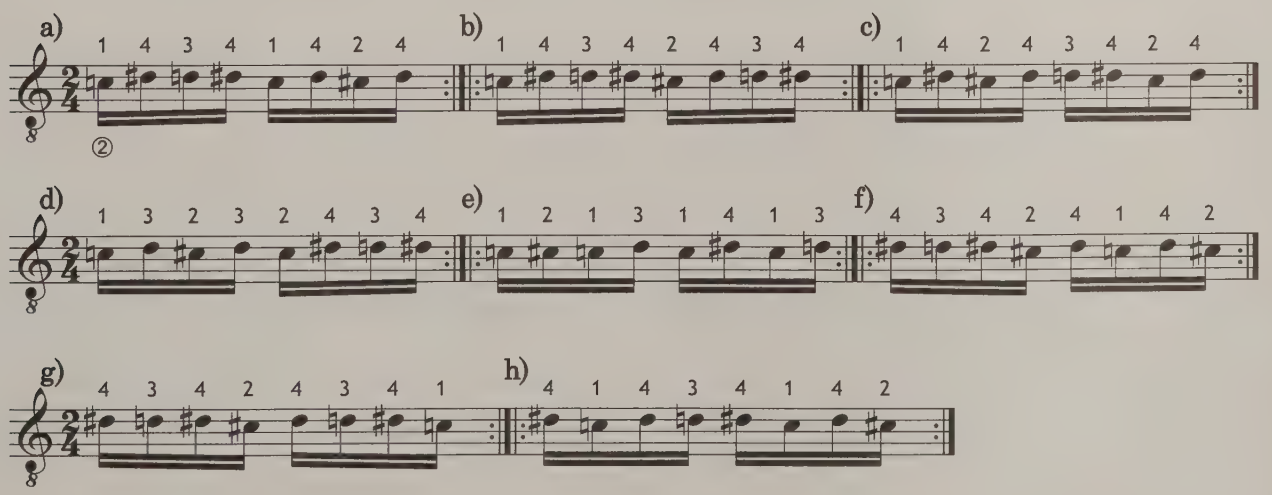
All combinations displayed schematically:

a m i m	a m i m	a m a i	a m a i	a i m i	a i m i	a i a m	a i a m
1 2 4 3	1 2 3 4	1 3 4 2	1 3 2 4	2 1 4 3	2 1 3 4	1 4 2 3	1 4 3 2
m i m a	m i m a	m a m i	m a m i	m a i a	m a i a	m i a i	m i a i
2 3 4 1	2 3 1 4	2 4 1 3	2 4 3 1	3 1 4 2	3 1 2 4	3 2 1 4	3 2 4 1
i m a m	i m a m	i a m a	i a m a	i m i a	i m i a	i a i m	i a i m
3 4 1 2	3 4 2 1	4 1 2 3	4 1 3 2	4 2 1 3	4 2 3 1	4 3 1 2	4 3 2 1

46



47 **The pattern 4 3 2 1 0 disassembled in groups of two to groups of fives**

48 **Strengthening of the 4th Finger**

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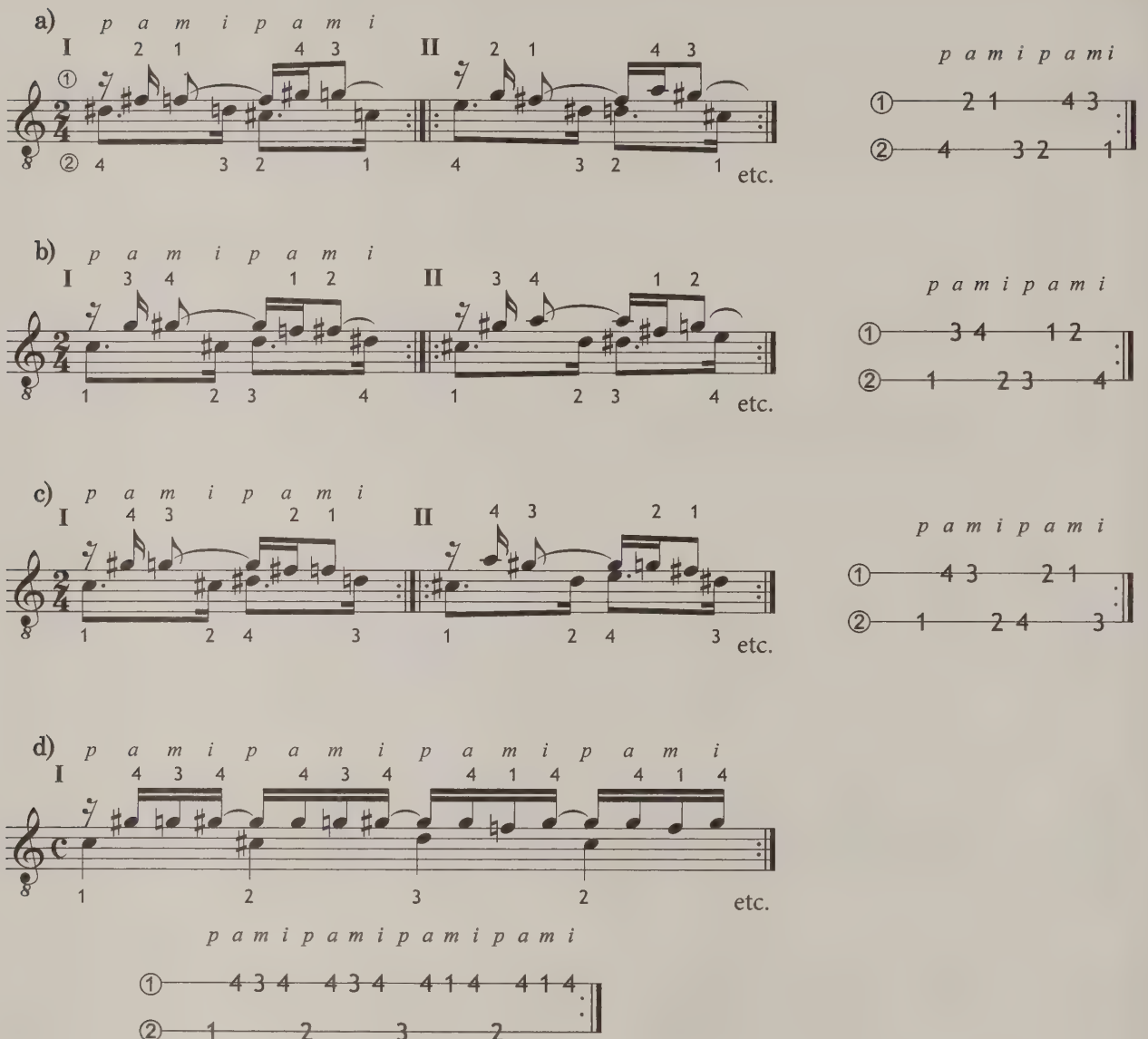
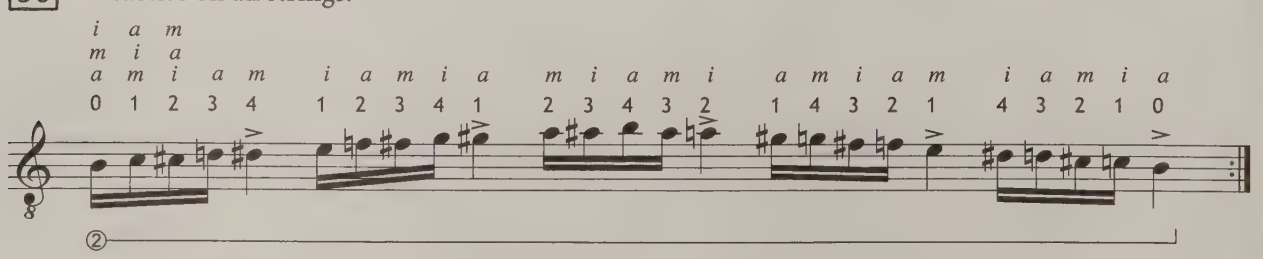
Also practice on strings ①–③, ①–④ and ①–⑤!


a)
p a m i p a m i
I
II
etc.
p a m i p a mi
b)
p a m i p a m i
I
II
etc.
p a m i p a m i
c)
p a m i p a m i
I
II
etc.
p a m i p a m i
d)
p a m i p a m i p a m i p a m i
I
etc.
p a m i p a m i p a m i p a m i

50 Practice on all strings!

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III. Scales in All Keys

Studying scales in all keys using various RH patterns is not only the most common form of coordination exercise but, beyond that, it also serves as a basis for the study of the most important technical, guitar-based skills: crossing strings, shifting positions, technique for playing runs, independence of the LH, arpeggios and tremolo.

The Segovia model, which arose out of the traditions of Tárrega and Llobet and is slightly modified here, has proven itself in practice based on the configuration of the fingers of the LH and its shape on a single string (see "The Principles of the Four Hand Shapes," p. 24). The system of alternating Major and (melodic) Minor scales over two and three octaves in the order of the circle of fifths contributes to the fact that the LH has to perform extremely difficult shifts, especially with Minor scales. The individual Major and Minor scales should be practiced separately at first. Particularly the many necessary shifts demand a critical ear and close observation. The movements in the LH have to be fluent and smooth, its fingers' movements small and economical.
There are two educational objectives which you have to consistently regard and which can often slip your attention based on your playing experience and practice:

1. The absolute evenness of the notes.

2. Playing real legato unconditionally.

Preparatory Studies for Scales and Runs

Contrary to the chromatic coordination exercises, scales are based on diatonic material. In order to train your fingers for diatonic runs, they are divided into three groups:

Group 1 with 1 2 4

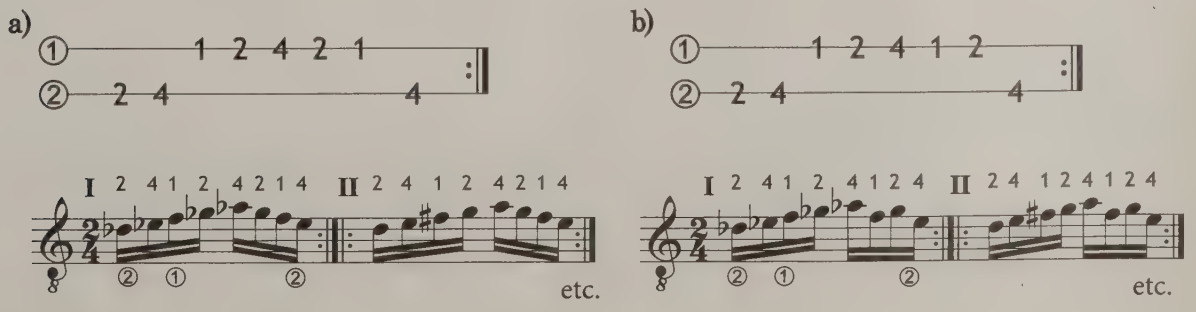
Group 2 with 1 3 4

Group 3 with 1 2 3 4

Short scale formulas (runs) of 8 notes over 2 strings are formed with the individual groups which should be practiced on 2 strings from position I to IX and back again.

1 Exercise on 2 Strings with 1 2 4

To be played optionally on strings ① / ② or ④ / ⑤ using **i-m**, **m-i**, **m-a**, **a-m**, **i-a**, **a-i**, **p-i**, **i-p**.



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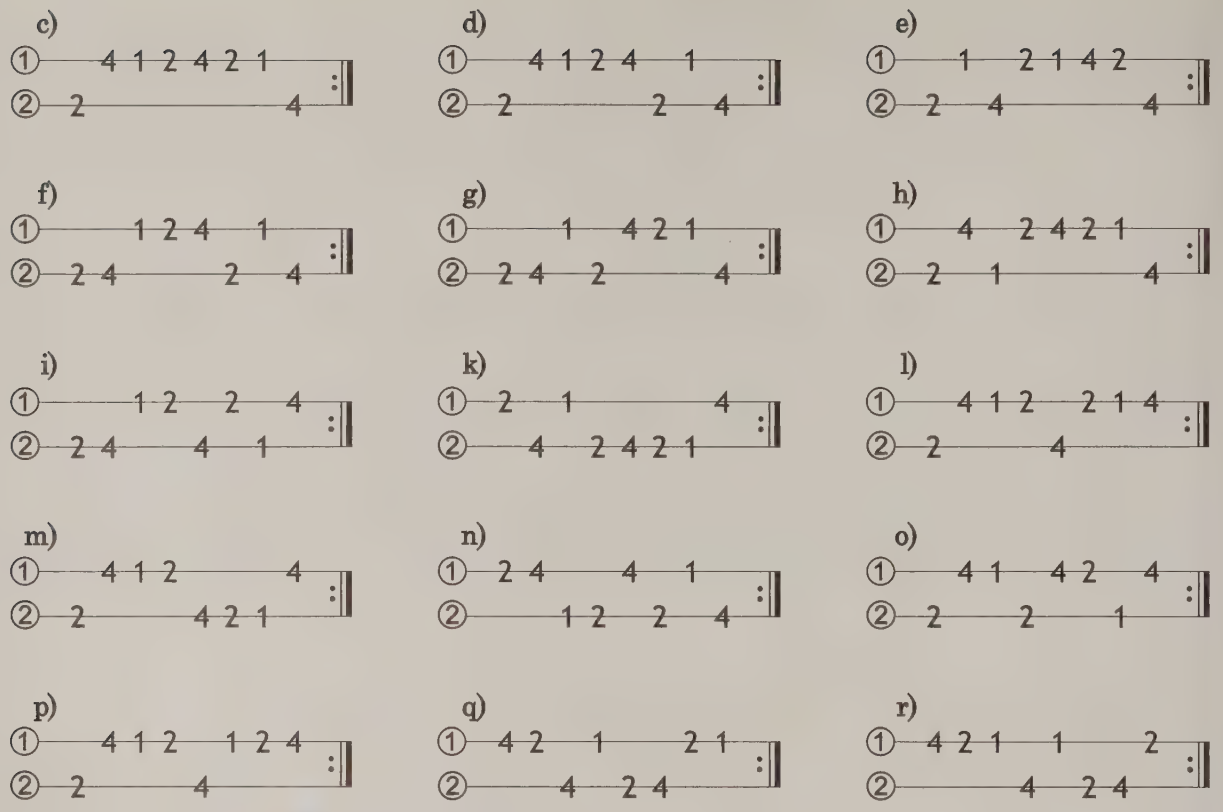
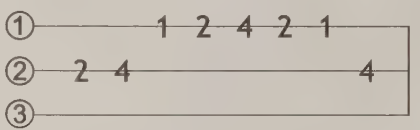


To train the independence of the LH fingers more intensively, you can vary the exercise by fixing the 3rd finger on the 3rd string:

Example:

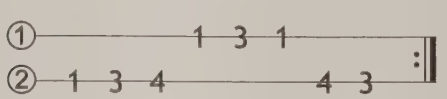


3rd finger fixed on ③

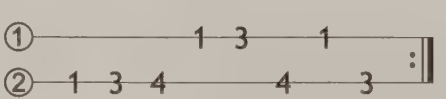
2 Exercise on 2 Strings with 1 3 4

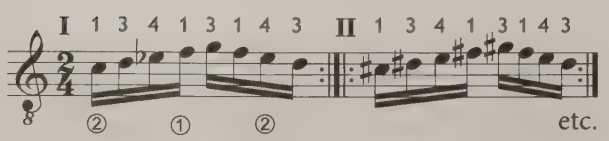
To be played optionally on strings ① / ② or ④ / ⑤ with **i-m**, **m-i**, **m-a**, **a-m**, **i-a**, **a-i**, **p-i**, **i-p**.

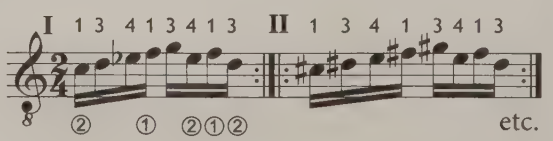
a)



b)







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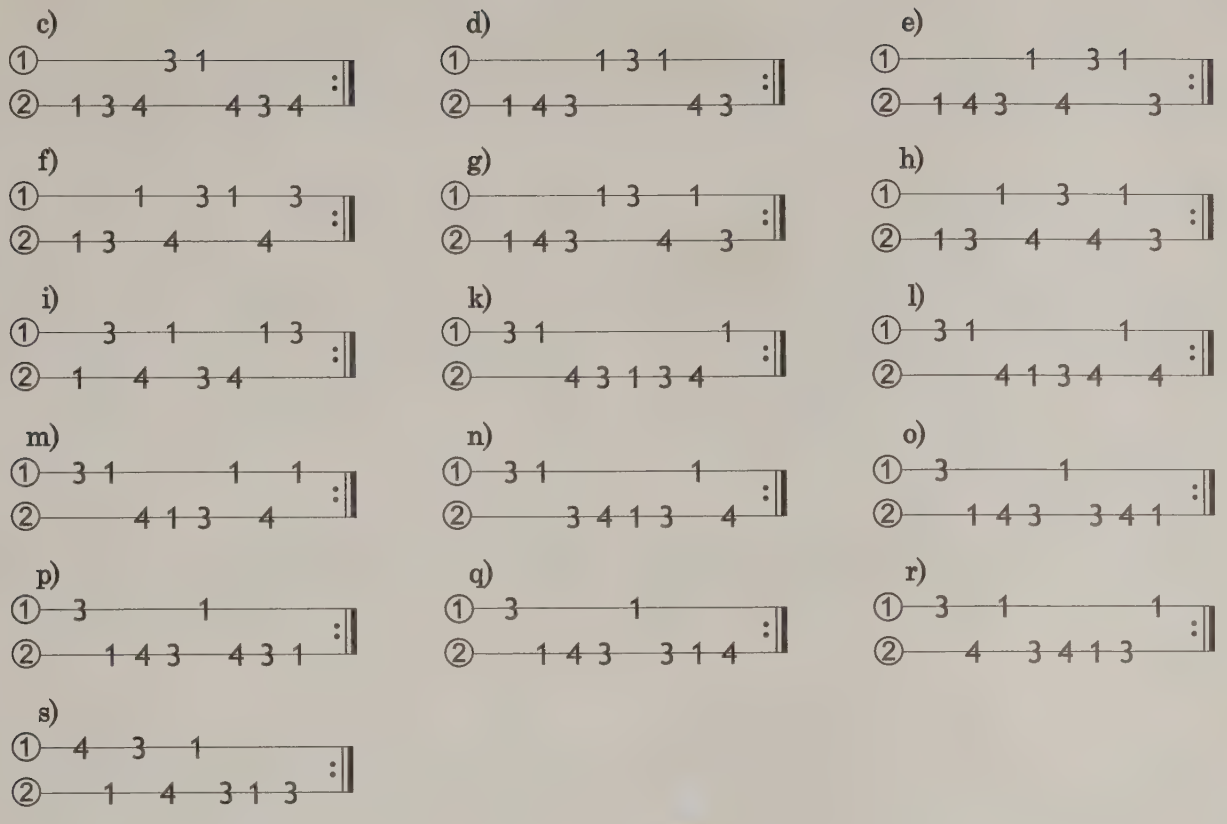
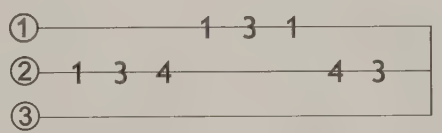


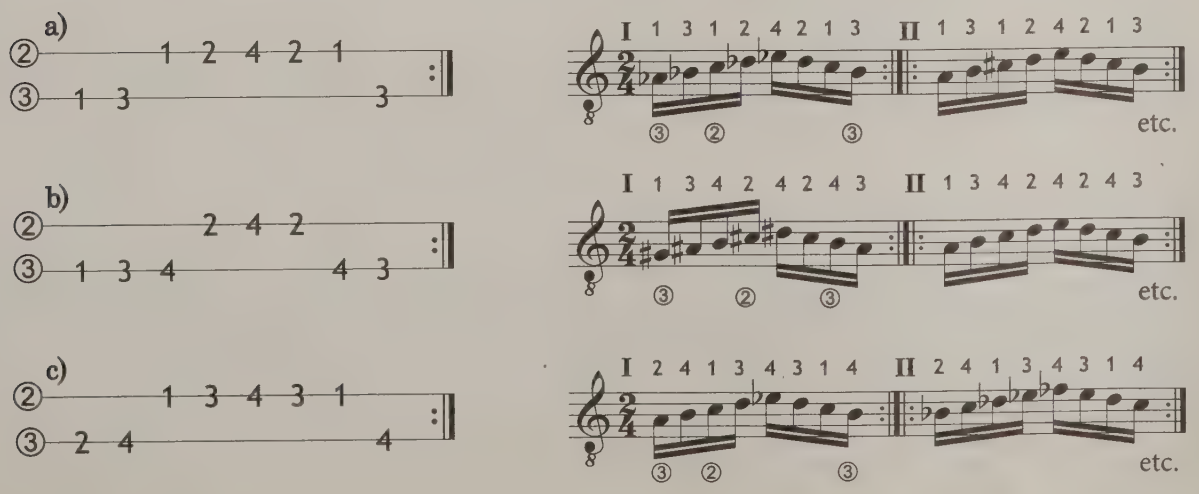
The independence of the LH fingers can be more intensively trained by fixing the 2nd finger on the 3rd string:

Example:



2nd finger fixed on ③

3 Exercise on 2 Strings with 1 2 3 4

To be played on strings ③ / ② with **i-m**, **m-i**, **m-a**, **a-m**, **i-a**, **a-i**, **p-i**, **i-p**.

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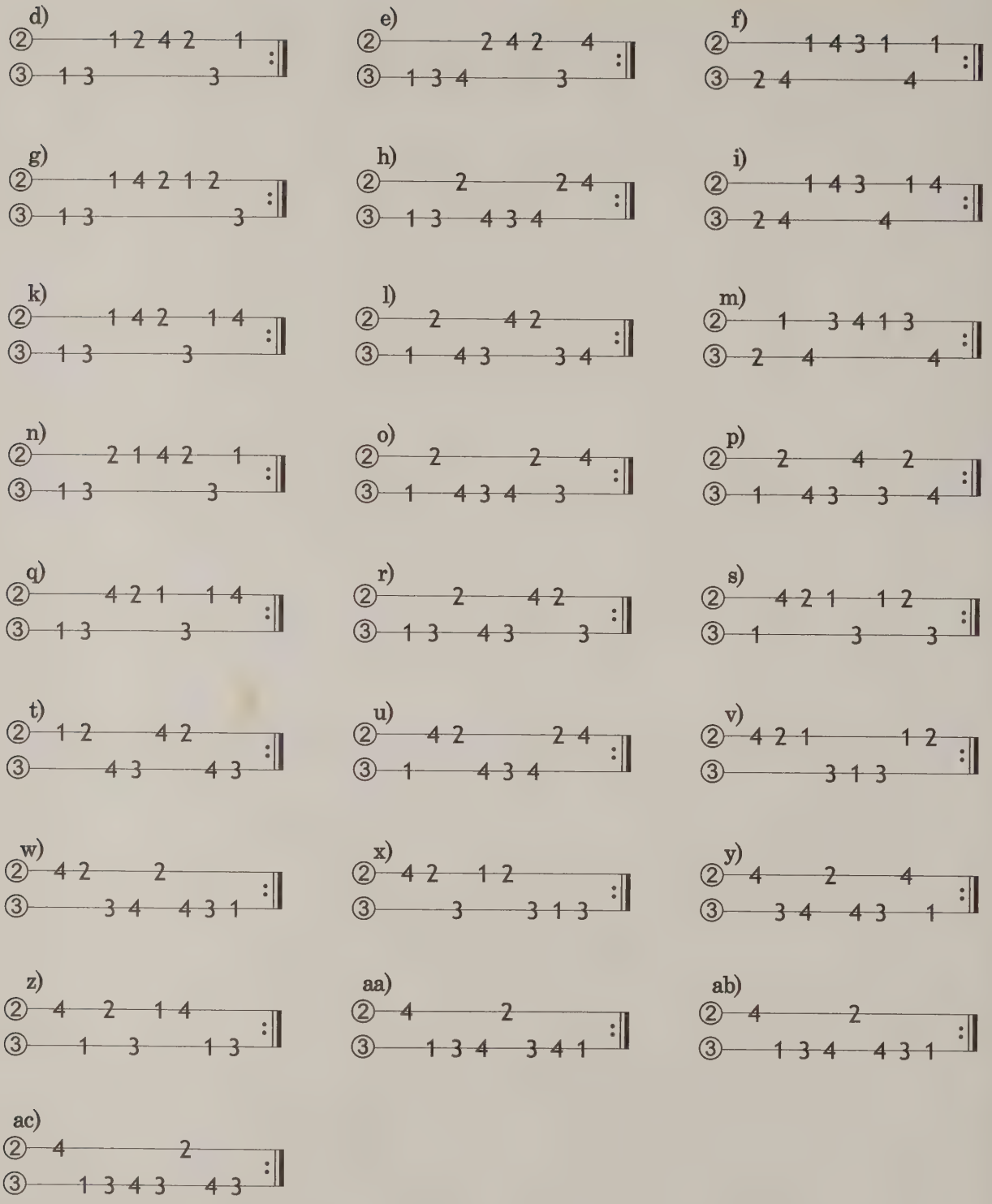

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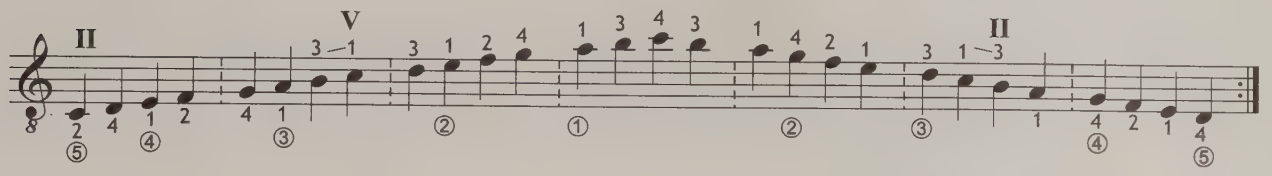
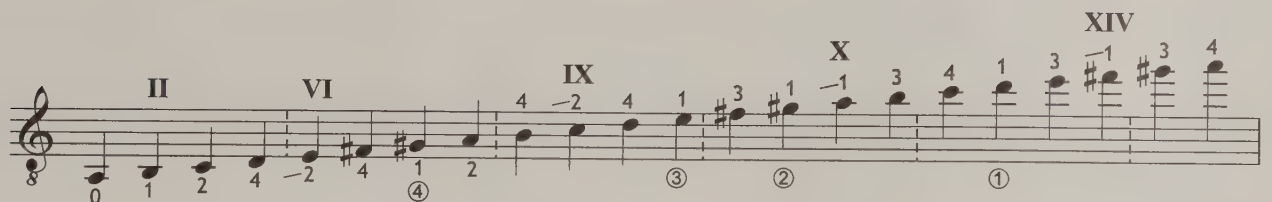
Scales over Two and Three Octaves in the Circle of Fifths and Fourths

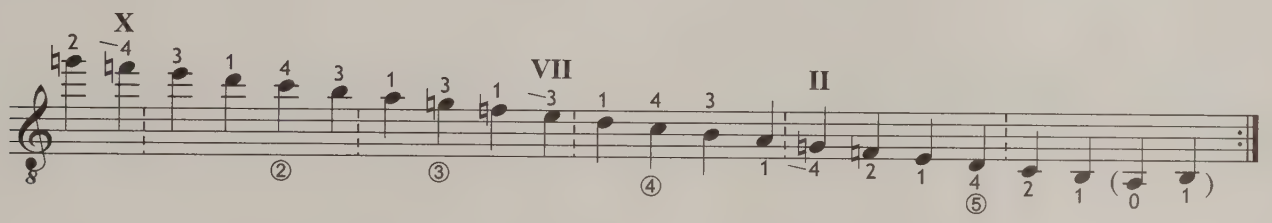
4 Please keep in mind: To be able to obtain certain scale practicing models (see No. 3 on page 134 and No. 4 on page 135), all scales listed here are presented in groups of four. To this end, the scales of three octaves have to be extended by two notes.

C Major

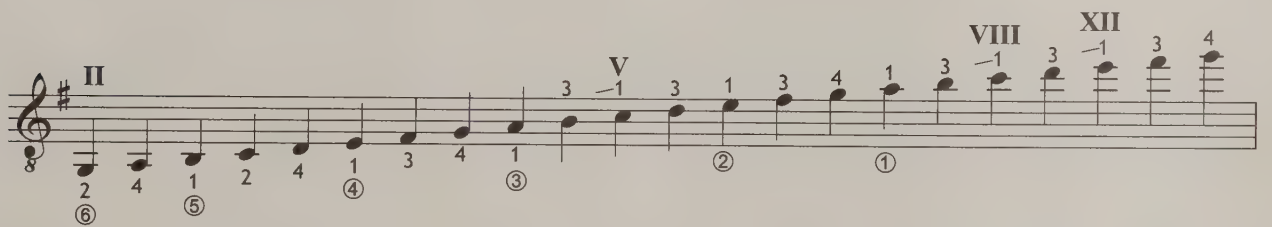


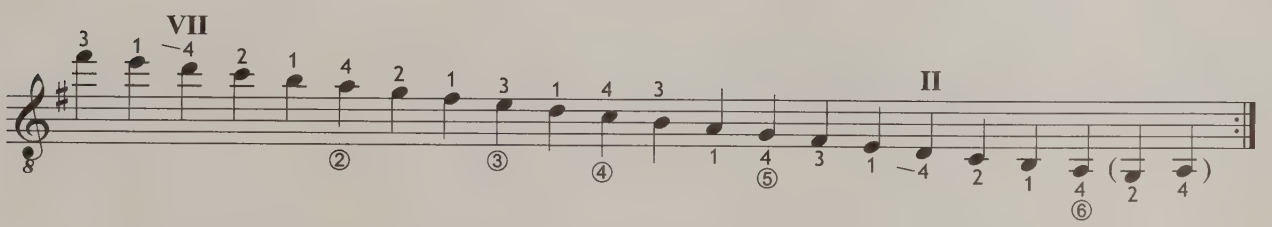
A Melodic Minor



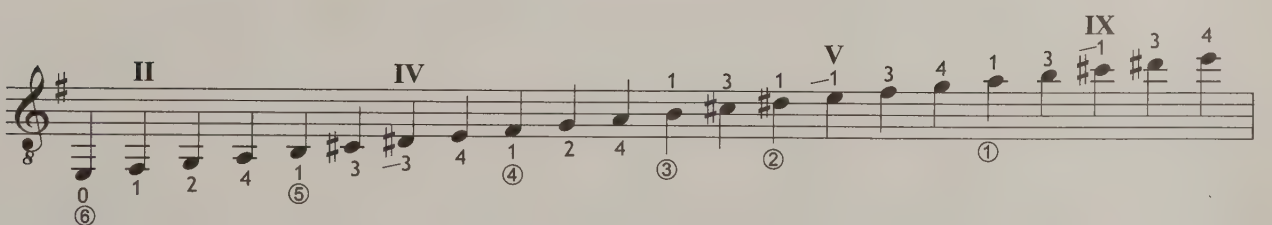
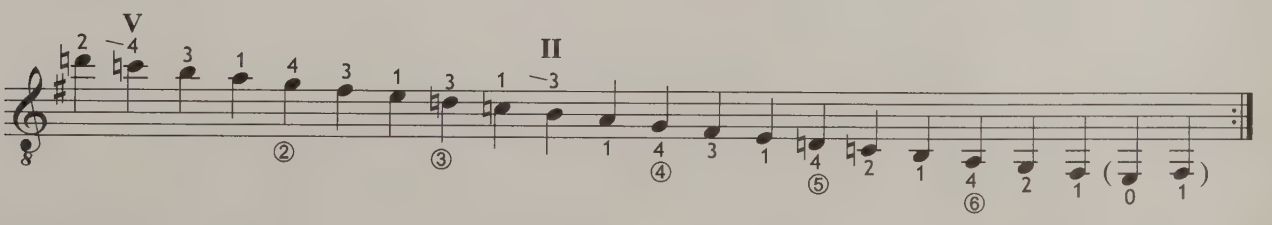


G Major





E Melodic Minor



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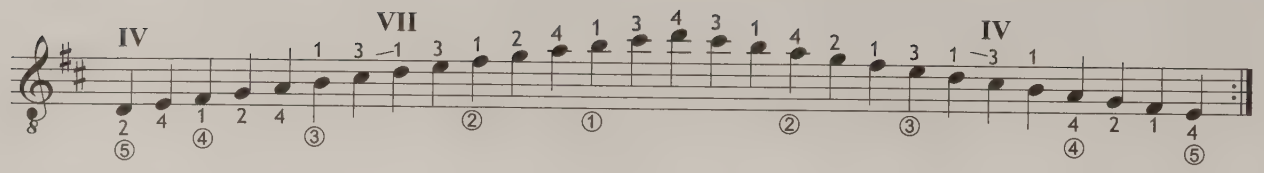
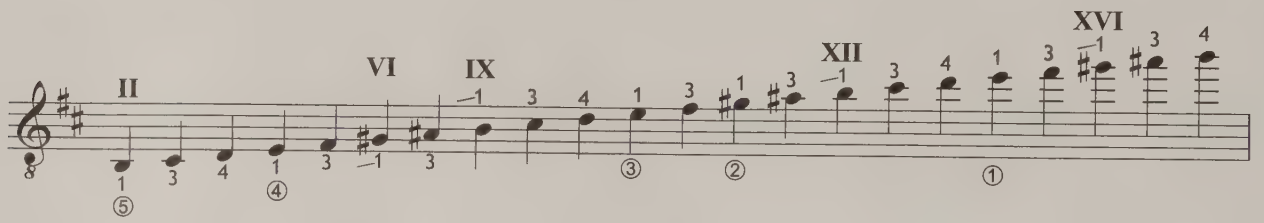
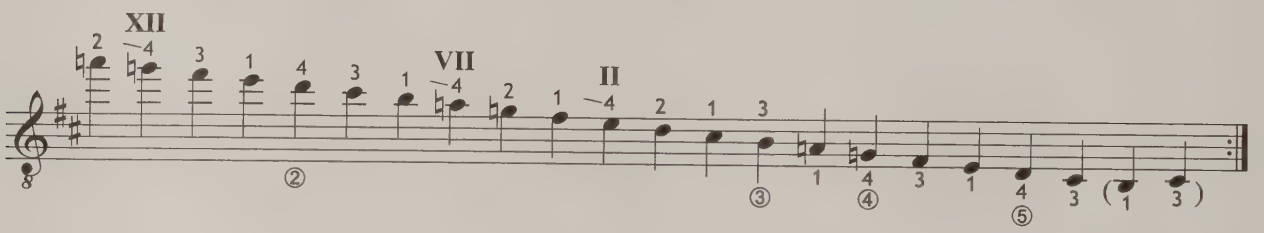
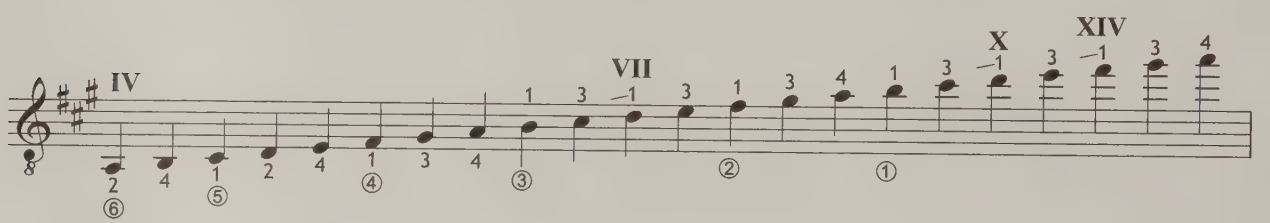
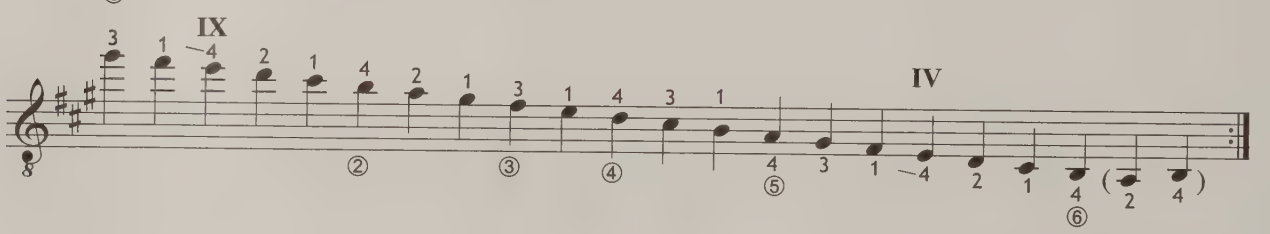
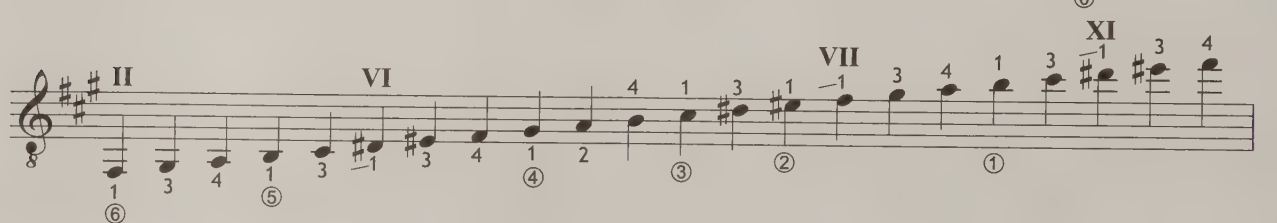
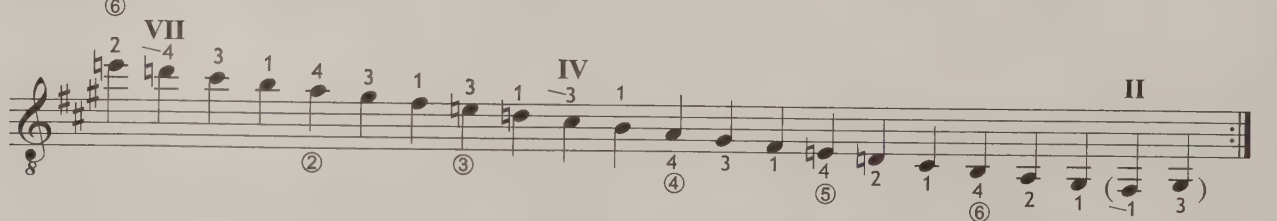
D Major



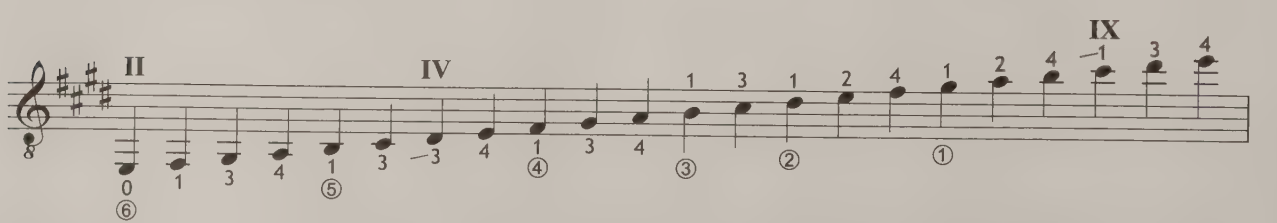
B Melodic Minor



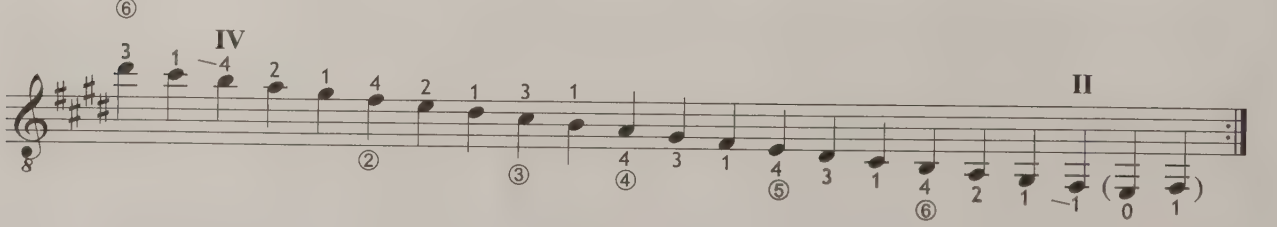
A Major



F♯ Melodic Minor



E Major





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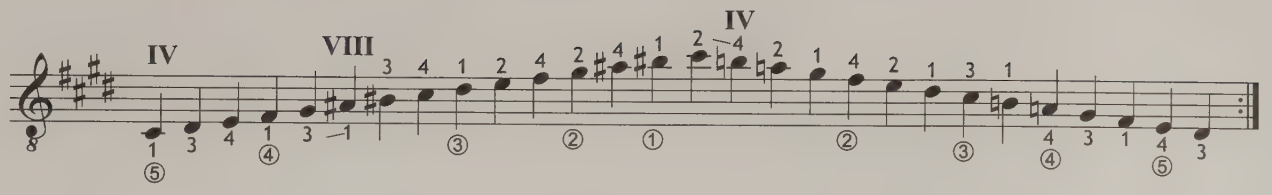
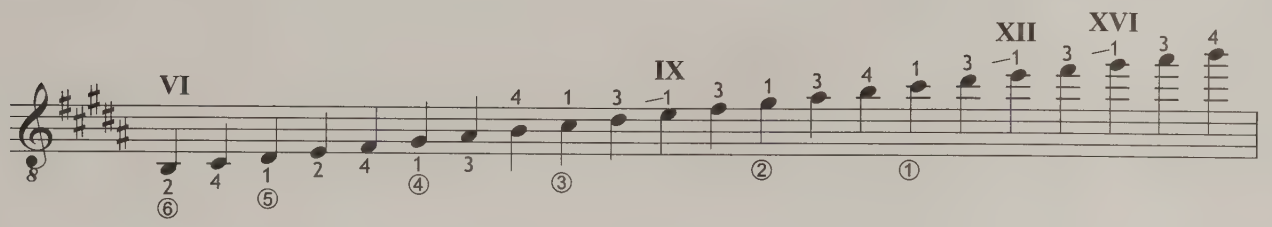
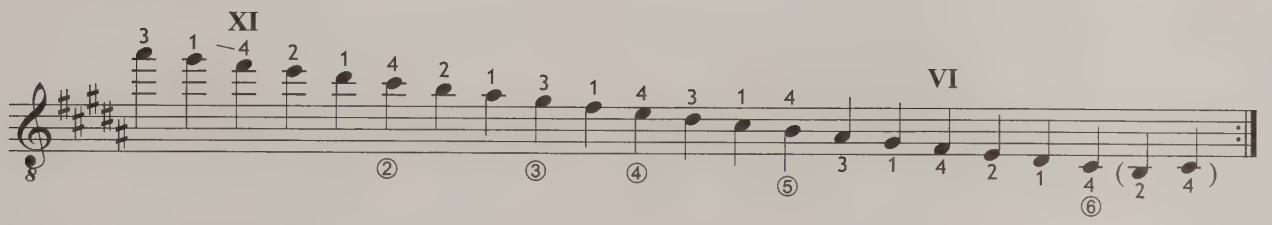
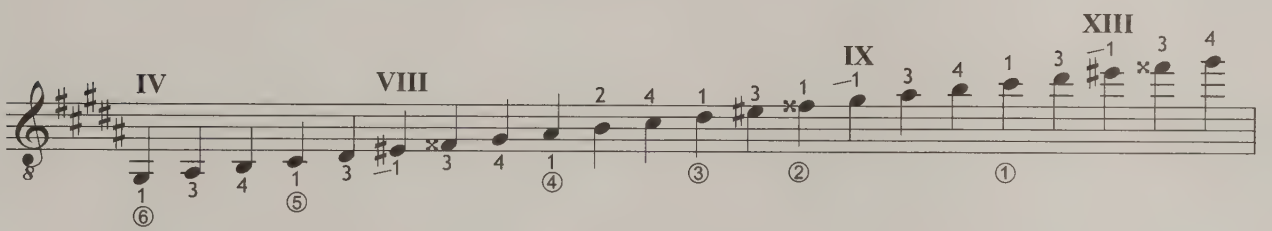
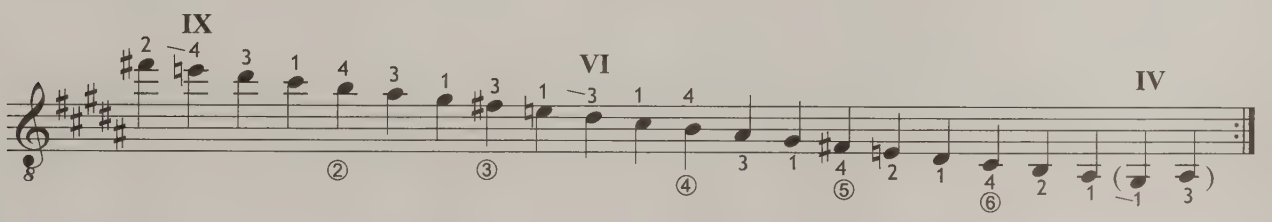
C♯ Melodic Minor

B Major



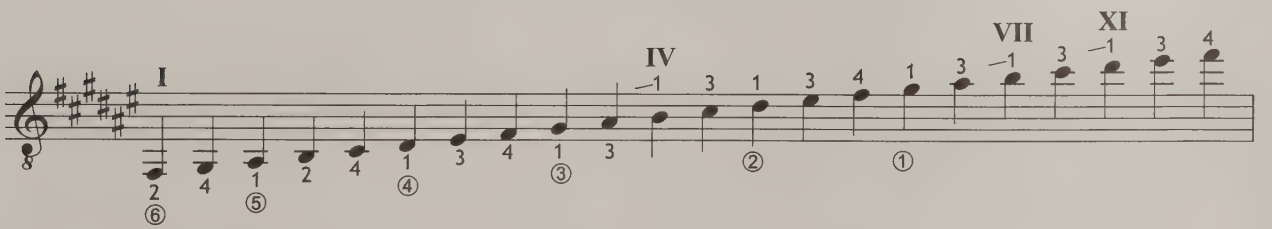


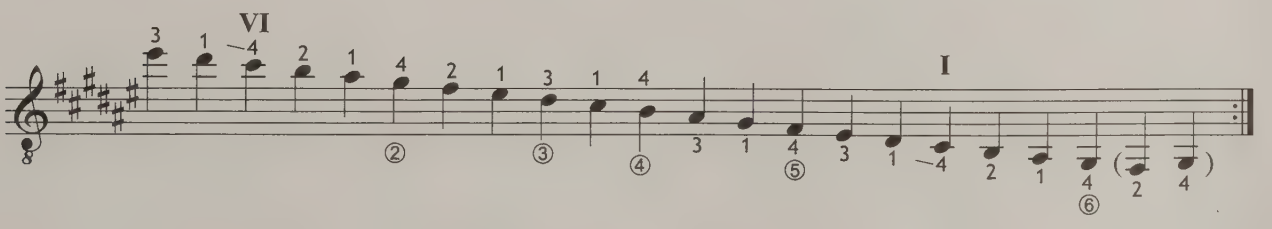
G♯ Melodic Minor

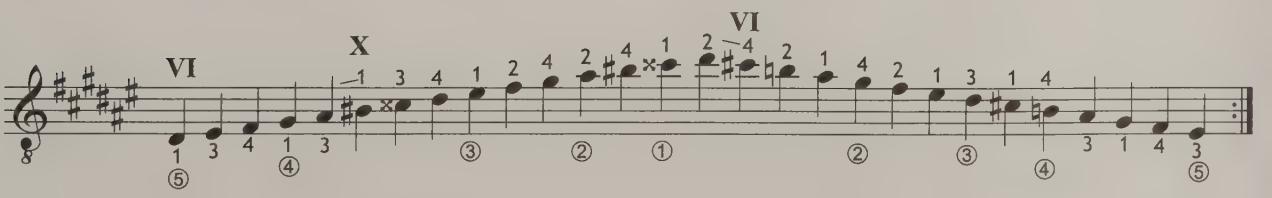




F♯ Major





D♯ Melodic Minor

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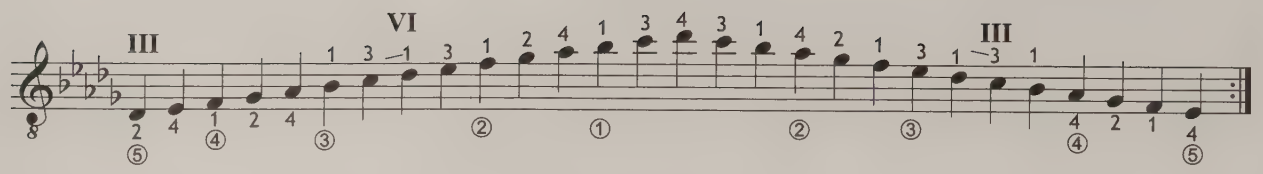
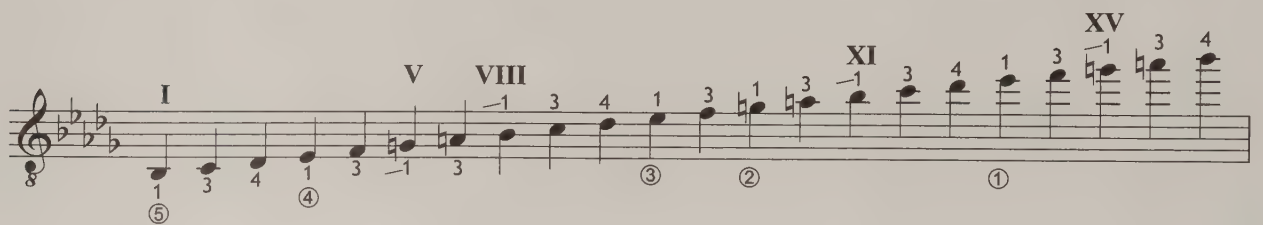
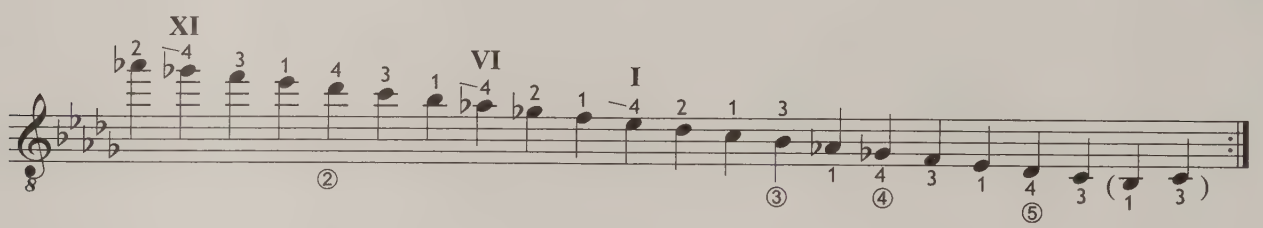
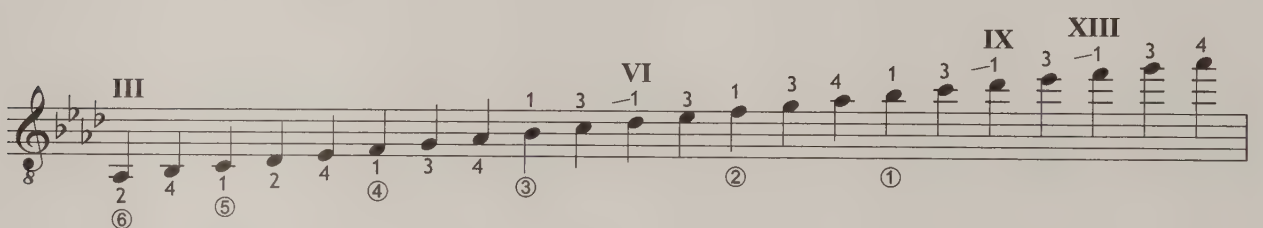
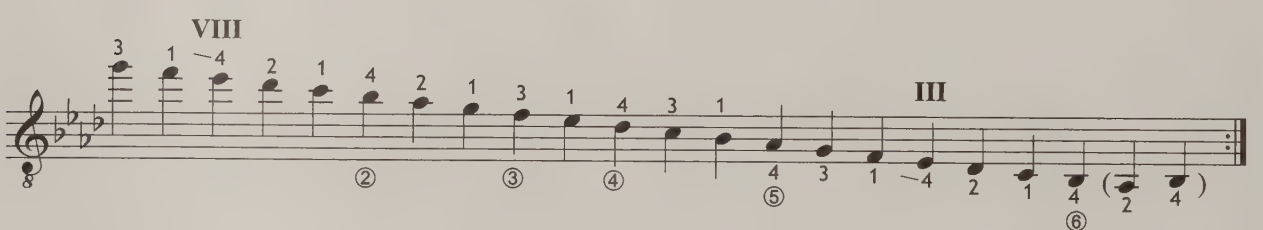
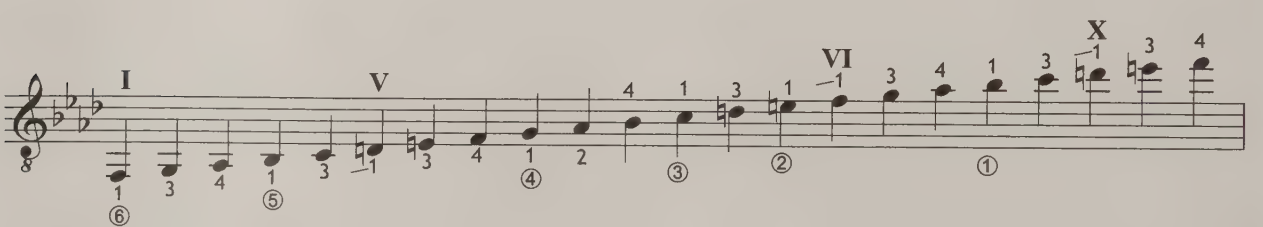
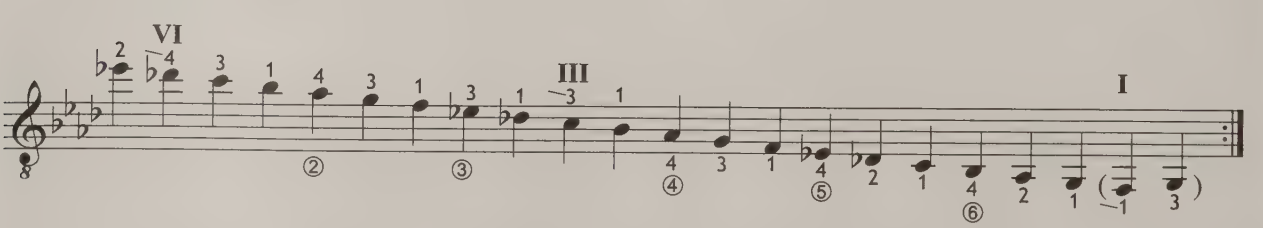
D♭ Major

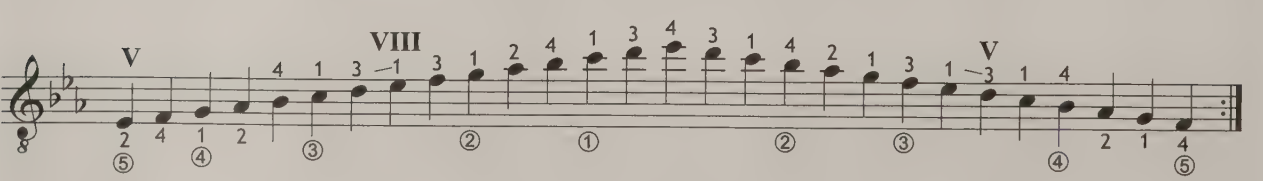




B♭ Melodic Minor

A♭ Major



F Melodic Minor



E♭ Major

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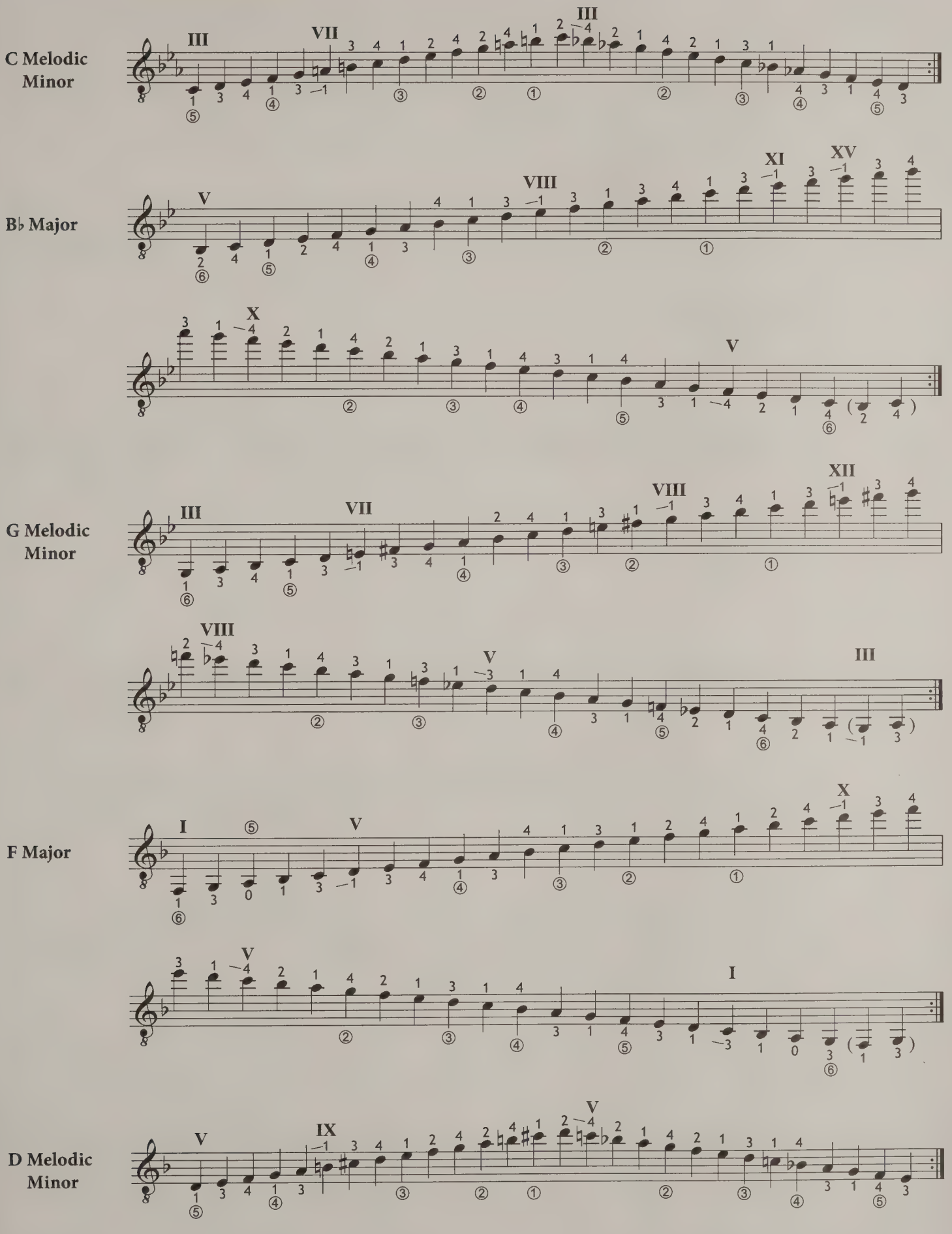

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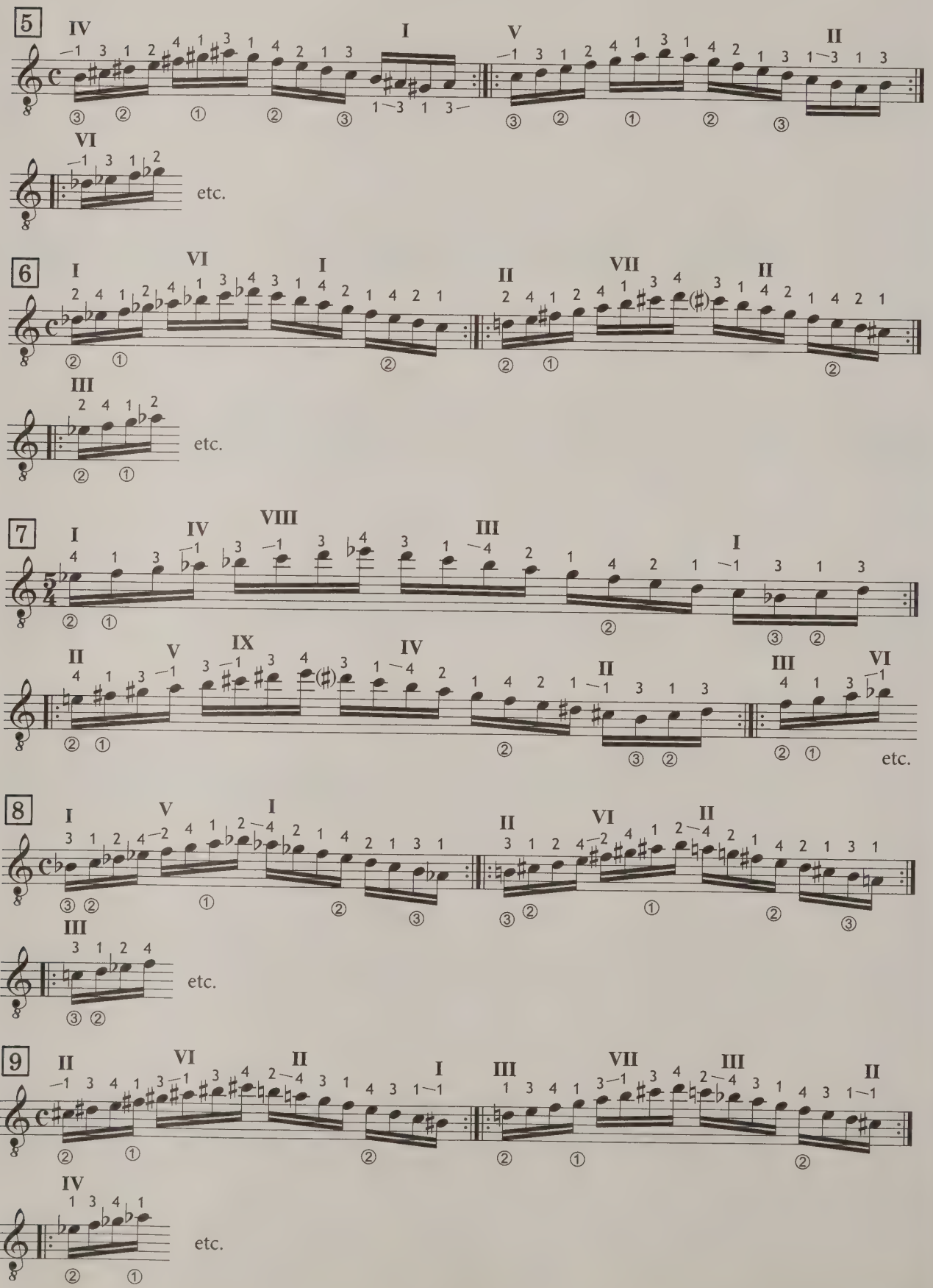
TIP

Five Short Exercises for Major and Minor Scales

These short scale formulas with ordinary yet difficult shifts on the treble strings should be practiced in various positions. They are ideal exercises for practicing shifts. Be mindful of smooth movements in the left arm-hand system. More about shifts can be found on page 30 as well as under "Shift Exercises" on page 173.



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Applied Practicing Methods for Scales

1. RH Patterns

The RH patterns for scales are equally as diverse as those for arpeggios. The unlimited possibilities can never be fully exhausted. However, it's not about testing all the different patterns, but rather mastering the important ones so you can perfect the coordination of your left and right hands.

Two Finger Patterns:

m i – i m	m a – a m	i a – a i
p i – i p	p m – m p	p a – a p

Three Finger Patterns:

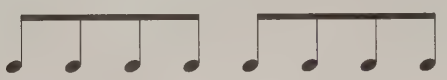
a m i	m i a	i a m
i m a	m a i	a i m
p m i	m i p	i p m

Four Finger Patterns:

a m i m	a m a i	a i m i	a i a m
m a m i	m i m a	m i a i	m a i a
i m a m	i m i a	i a m a	i a i m

2. Repetitions

8×, always on one note:



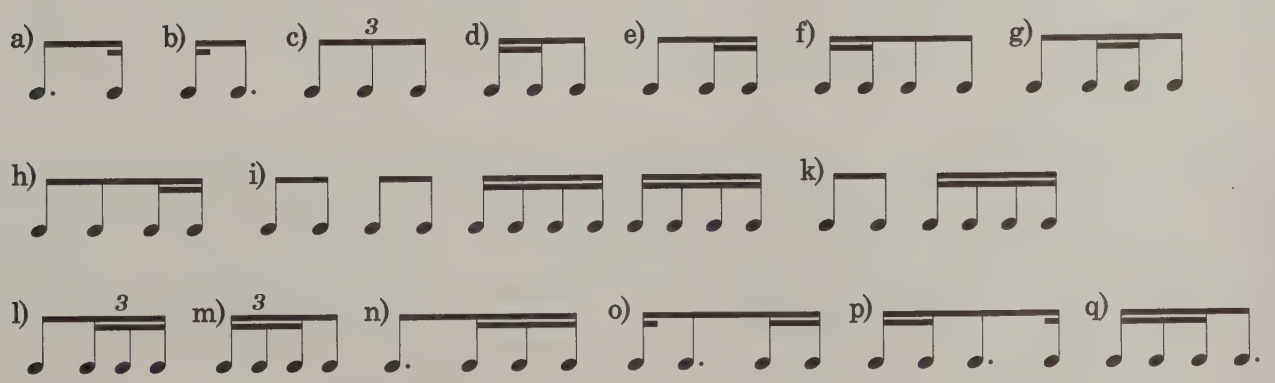
4×, always on one note:

2×, always on one note:

3×, always on one note:

For further variations, see "3. Rhythms" below which can also be repeated on a single note.

3. Rhythms



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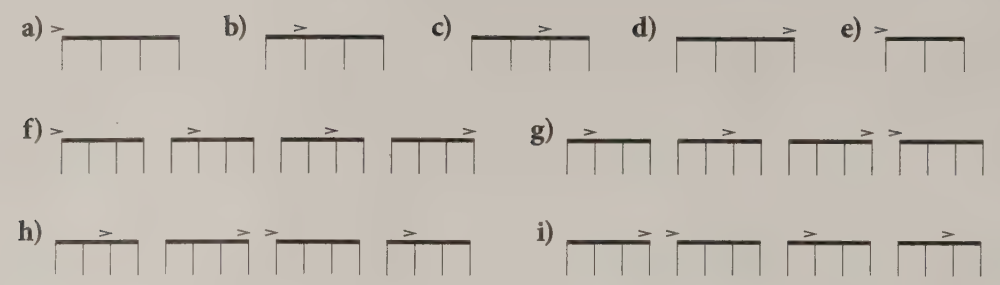
4. Accents

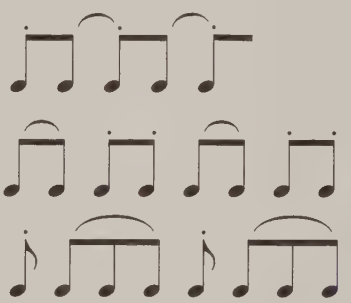


5. Articulation

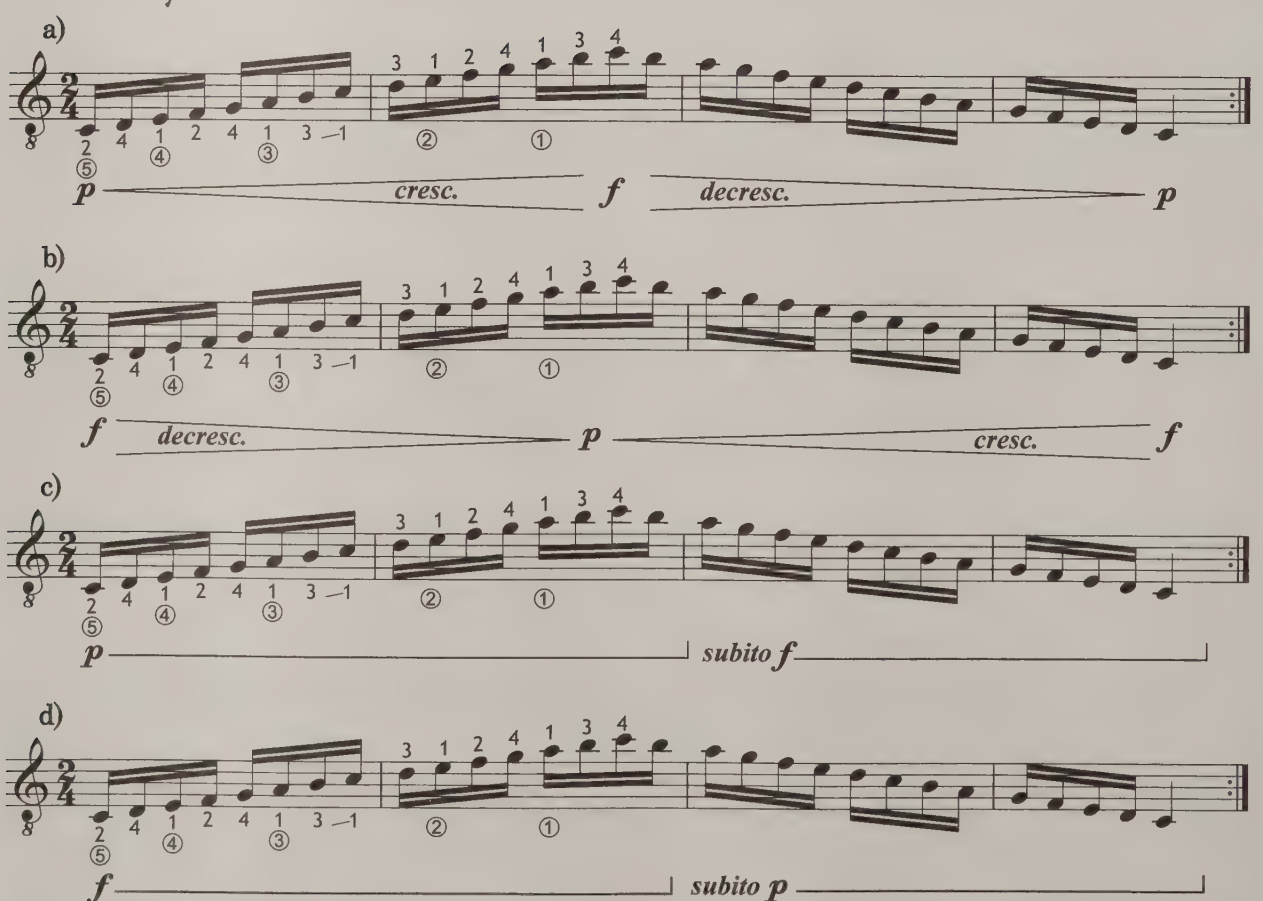
Legato: Linking two notes via "legato" demands precise, temporal adjustment of the LH and RH and close, critical listening. Playing legato is one of the most difficult tasks you will encounter on your path to musical guitar playing and is a basic prerequisite for studying scales.

Very short staccato:

Alternating staccato and legato:



6. Dynamics



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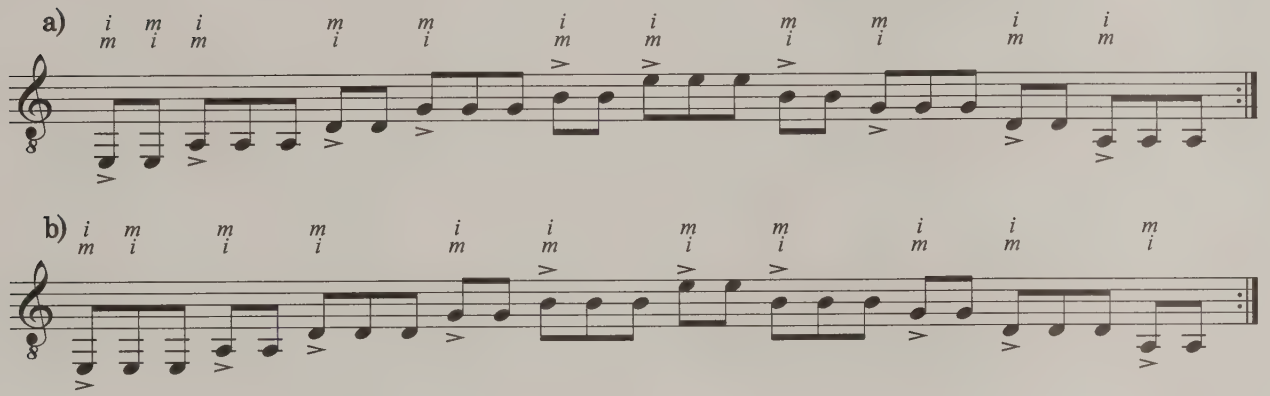
Examples for Practicing Single Scales and Runs

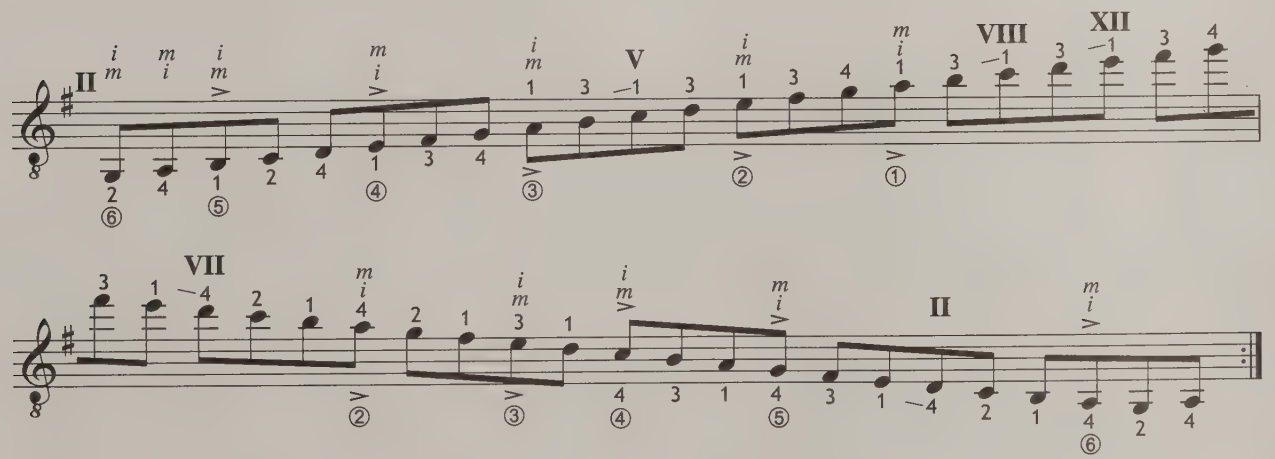
If you concentrate on just one or few scales while practicing, all the practice methods presented up until now are fundamentally applicable. On top of this, a scale or a run can be practiced more intensively by adopting an analytical perspective, i.e. by dividing it into various small scales, into "micro-runs" or by practicing the RH and LH separately.

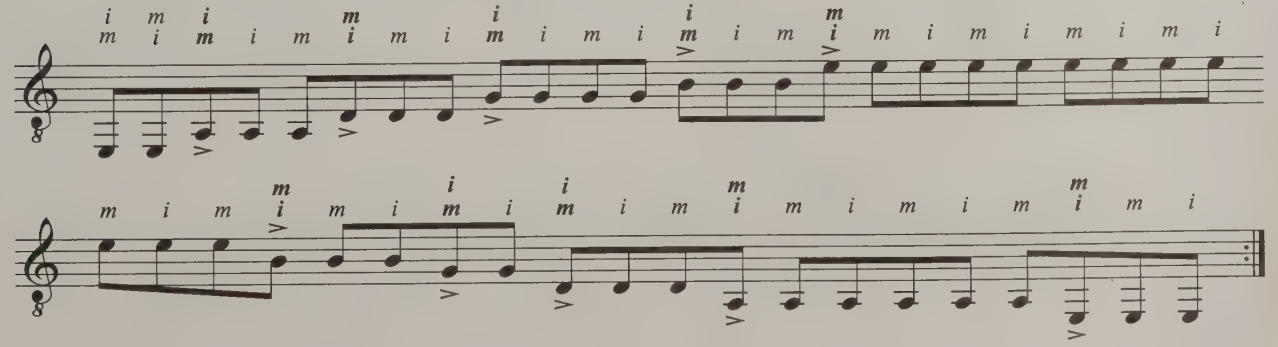
10 Preparatory Exercises on Open Strings

Difficult string crossings are found with scales which have two to three notes per string and conversely. The following exercises are based on this and each change of string is emphasized by accent.



11 G Major Scale over 3 Octaves in Groups of 4 Eighth Notes

All shifts and the RH fingerings while crossing strings have to be performed consciously, here for example with the common pattern **m-i** or **i-m**.

The same scale only for the RH alone on open strings:



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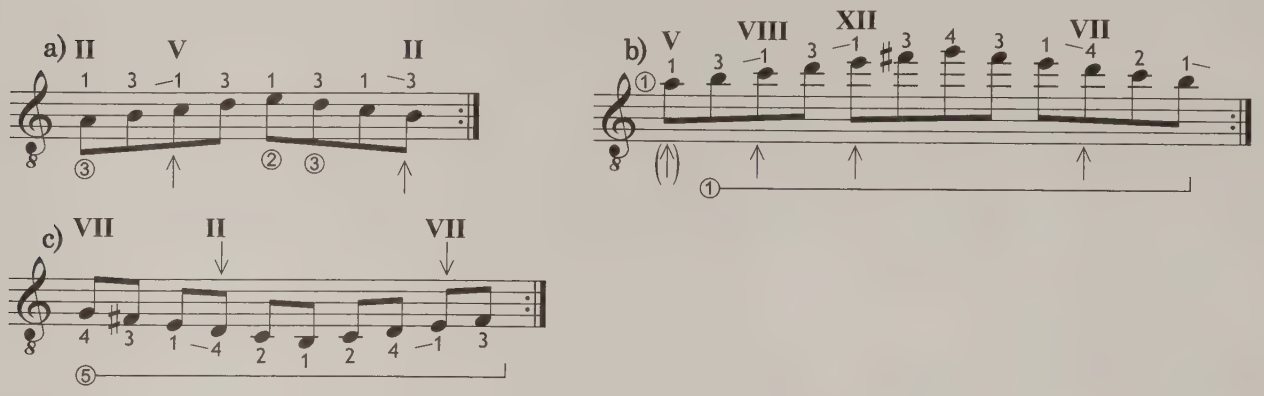
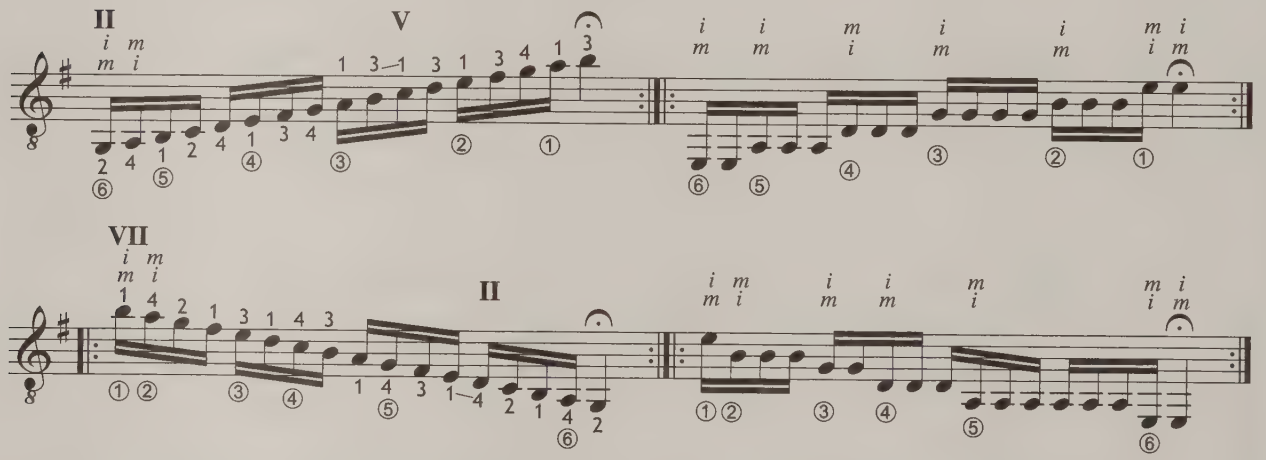
12 Three Shift Exercises

The next step is to control the five shifts. To arrive at a rotating exercise, more shifts will be added.

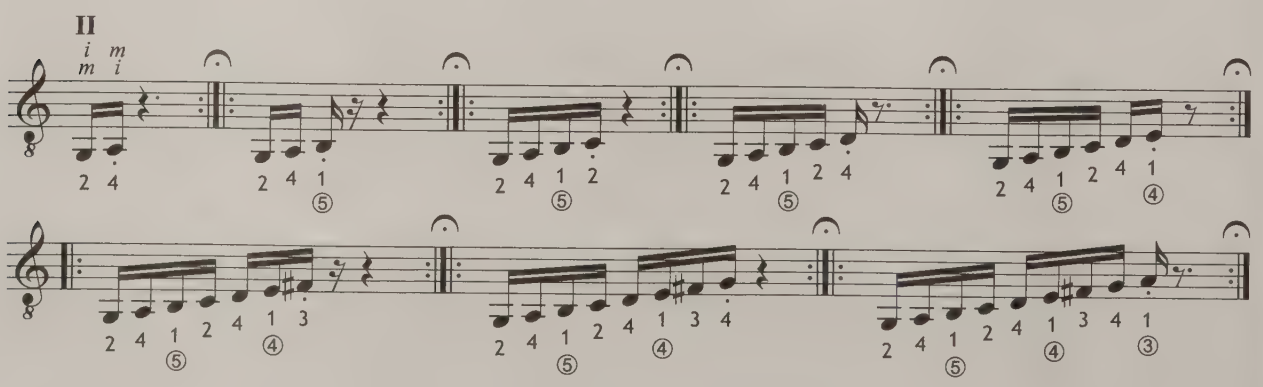


13 G Major in Two Parts

Ascending from the 6th to the 1st and descending from the 1st to the 6th string, alternating with open strings.

Scales in Small Note Groups

A further intensive practicing method is the repetition of small note groups taken from a scale or run by continual adding a note, or the shifting of a small group of notes.
In order to perform the groups cleanly and in a controlled fashion at first and then later cleanly and as fast as possible, numerous repetitions (at least 6–10×) including adequate concentration breaks are necessary.

Creating Small Runs by Continually Adding a Note

14 In the lower octave range:

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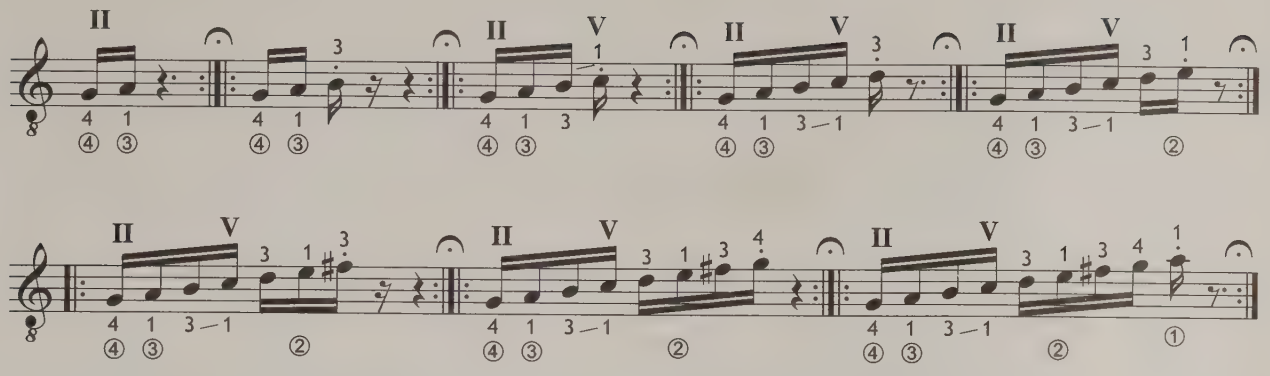
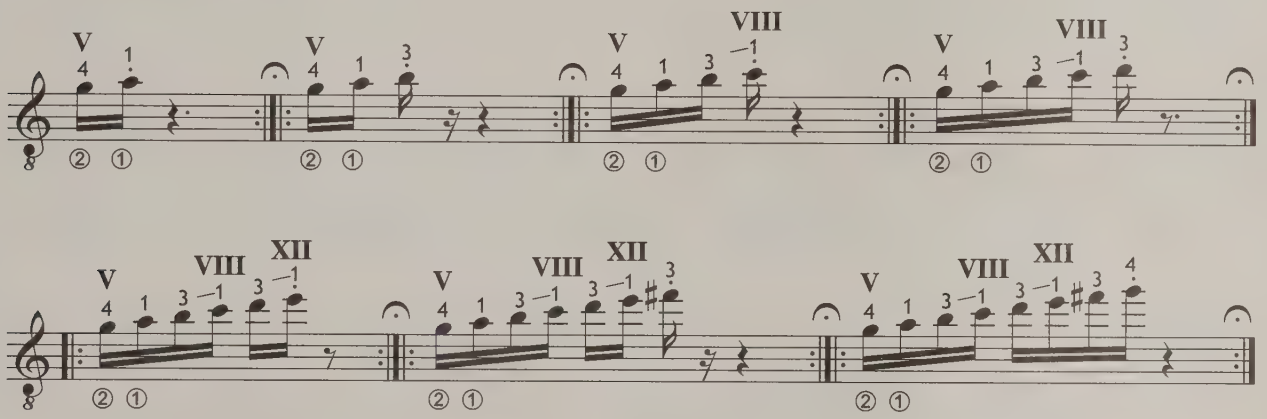
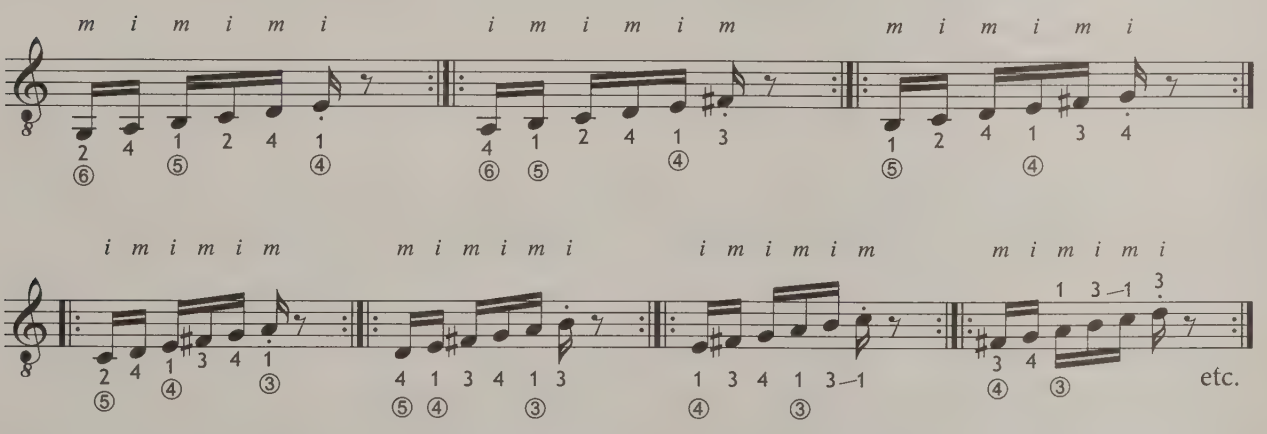
15 **In the middle octave range:**

16 **In the higher octave range:**

17 **The "Shifting" of Small Note Groups**

Like a short excerpt from the scale, this 6 note group "wanders" through the scale by shifting, always changing its beginning and ending notes.



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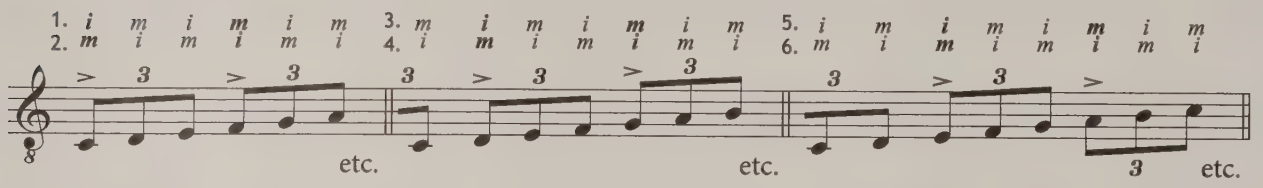
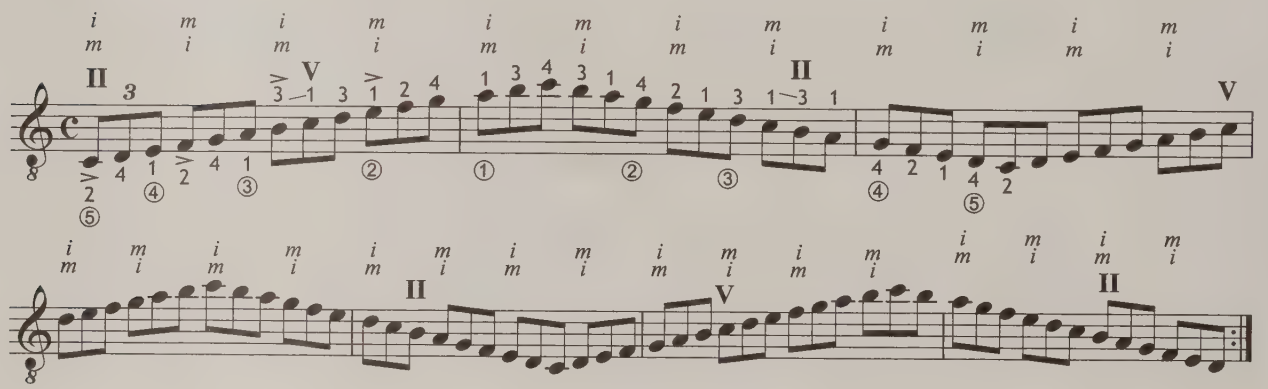
Scales in Triplets

Triplets, besides four note groupings, form the most important rhythmic unit in the music repertoire and are the basis for the mastery of any scale.

18 Triplets with Two Finger Alternation

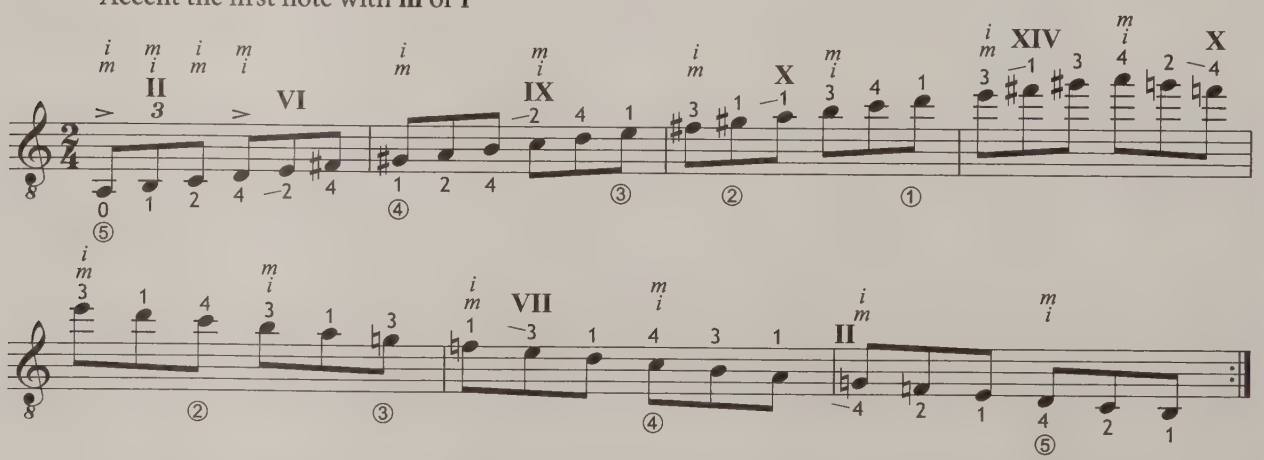
With the alternating two finger patterns **m-i**, **i-m**, **m-a**, **a-m**, **i-a**, **a-i**, **p-i** or **i-p**, the triplet accent alternates between the two fingers. With **i-m** and **m-i** alone, 6 triplet scales emerge due to the various accents.



Example: C Major
With a scale over two octaves, C Major for example, the accents will shift as follows when repeating it three times:

19 Example: A Melodic Minor

With a scale over 3 octaves, the RH fingerings should be performed as follows:

Accent the first note with **m** or **i**



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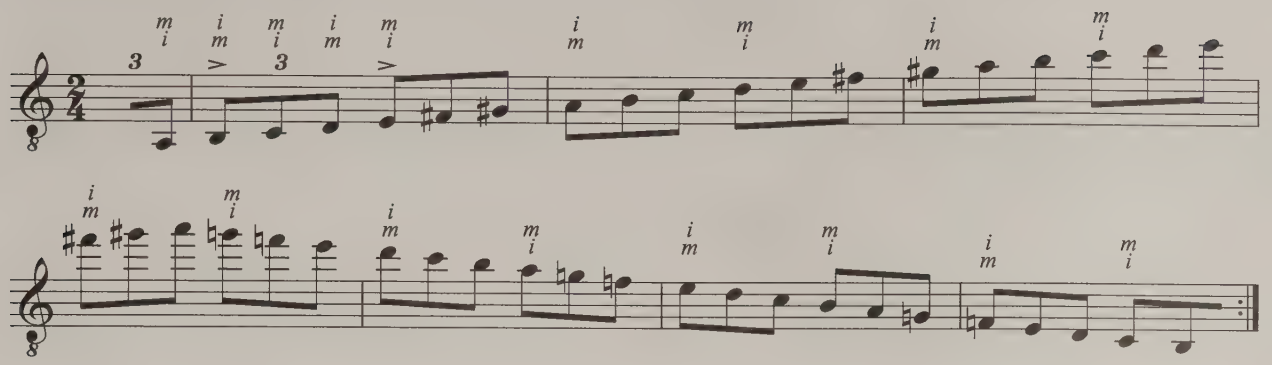
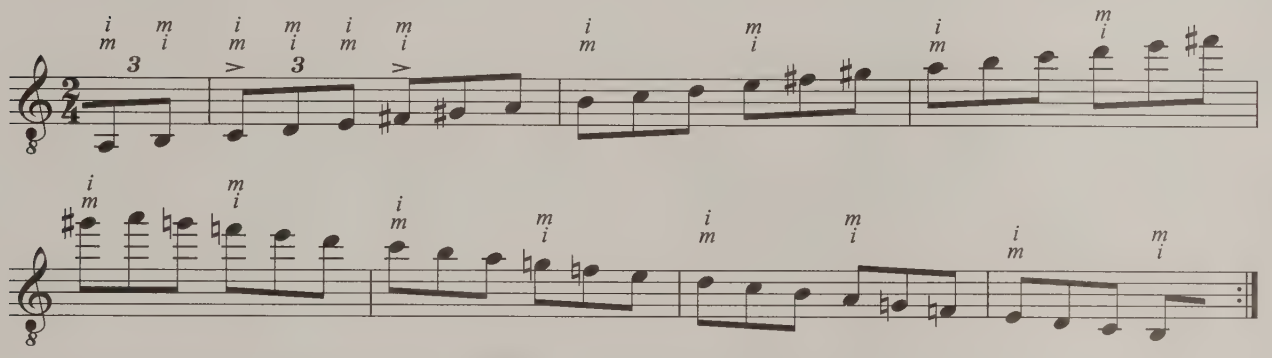
Accent the second note with **m** or **i**



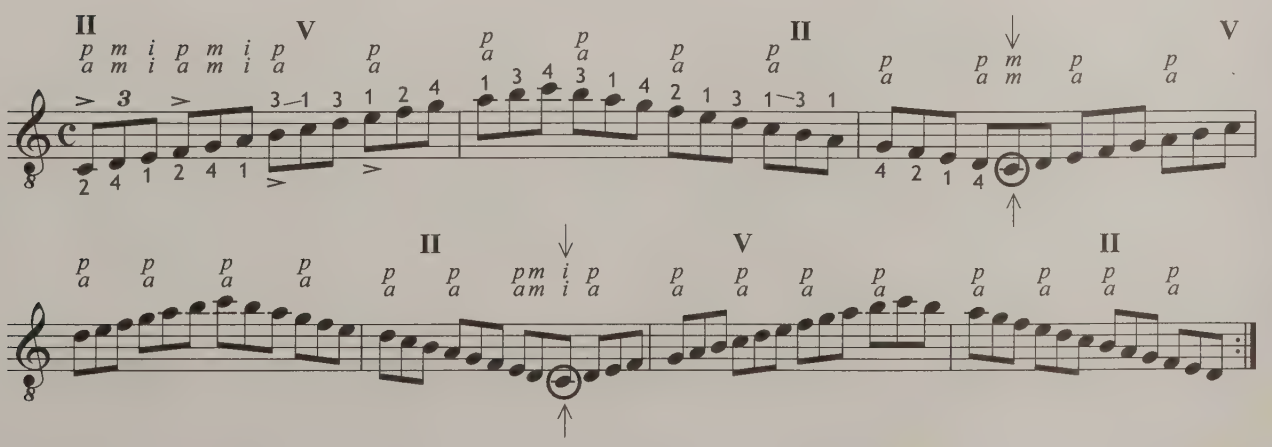
Accent the third note with **m** or **i**

Be mindful that by shifting the accents, **6** variations per scale are created. To ensure uniform training of the RH fingers, you shouldn't leave any of them out.

Scales in Triplets with Three Finger Alternating Patterns a-m-i and p-m-i

Although the three finger alternation pattern perfectly corresponds to a triplet, crossing strings with three RH fingers is very complex and doesn't always contain a convenient assignment of **a-m-i** or **p-m-i**. These extremely effective patterns can be practiced in turns, for example 6 scales (from C Major to B Minor) with **a-m-i**, 6 scales (from A Major to G♯ Minor) with **p-m-i**.

20 Scales over Two Octaves

Example: C Major

The starting note c is played with **a** (or **p**), the first time, **m** the second time and **i** the third time. **The accent remains, however, always with finger a or p respectively.**

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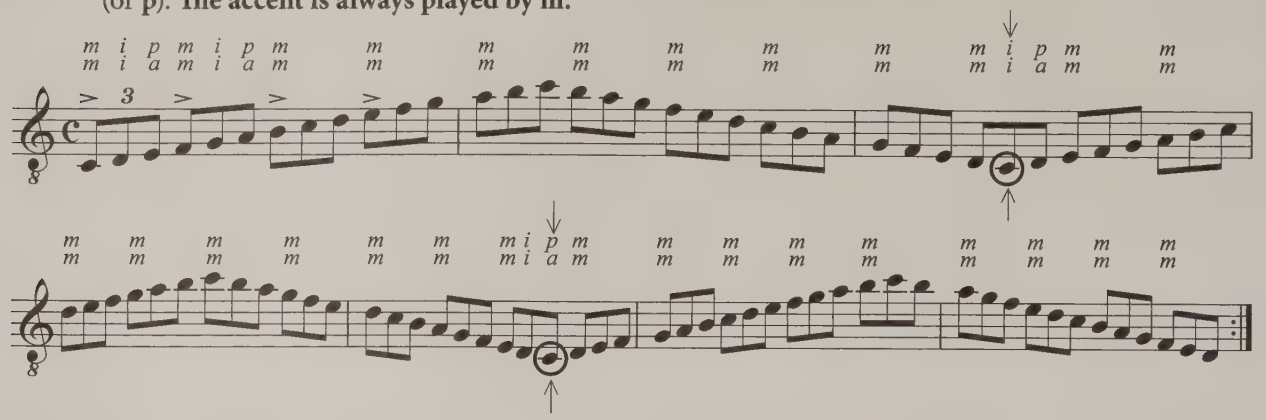
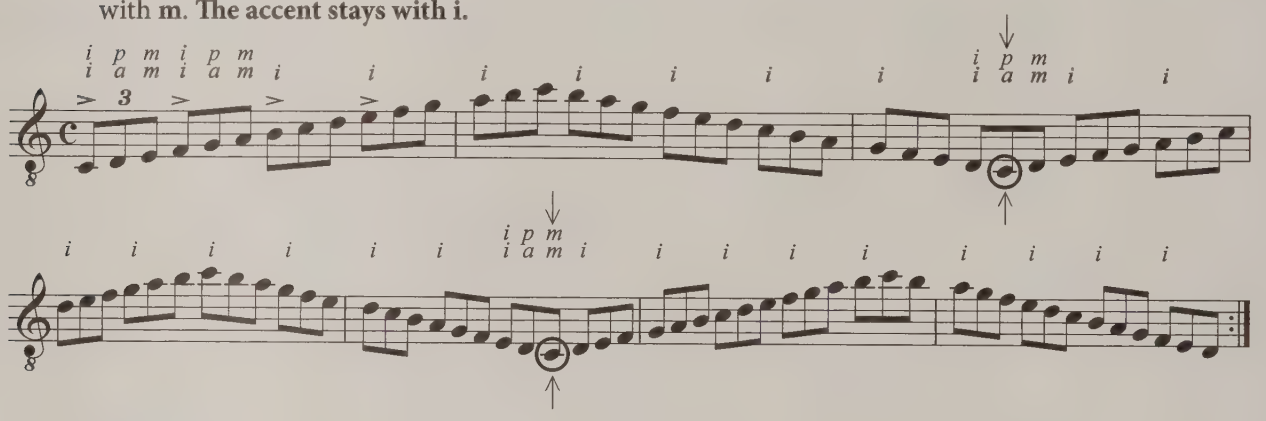
If you start with **m**, the second time you will play that beginning note with **i**, the third time with **a** (or **p**). **The accent is always played by m.**

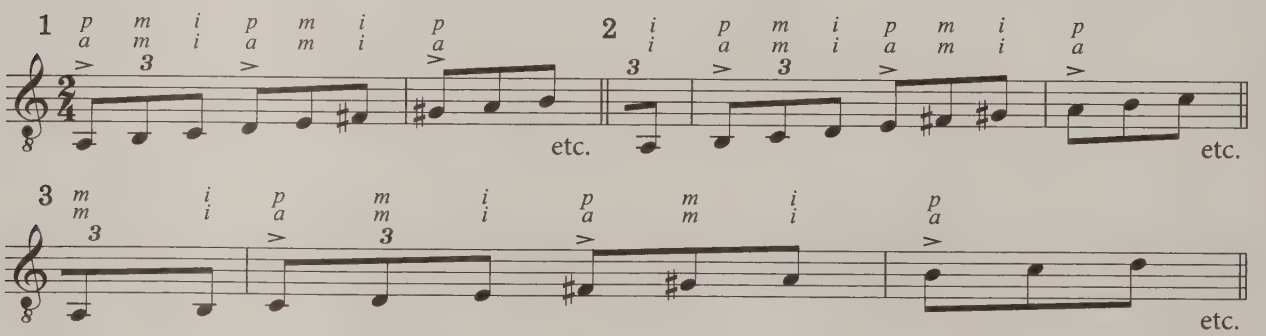


If you start with **i**, the second time you will play that beginning note with **a** (or **p**), the third time with **m**. **The accent stays with i.**

21 Scales over Three Octaves

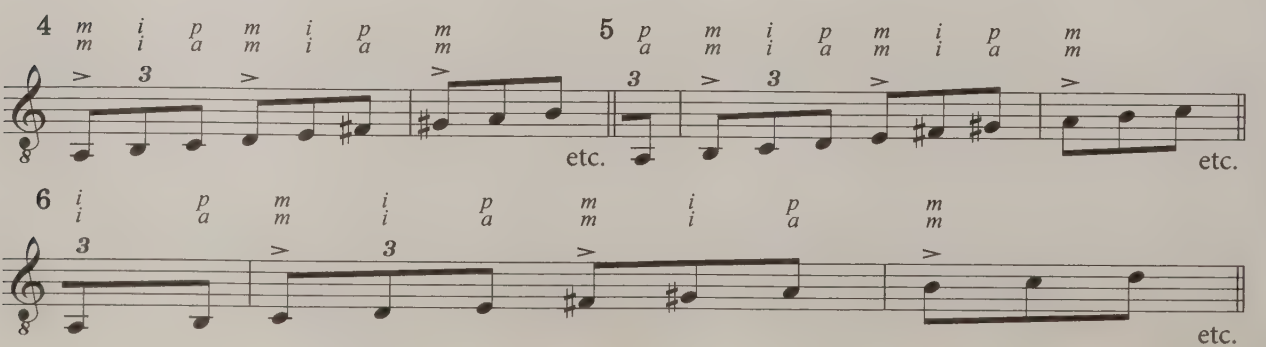
Example: A Melodic Minor

There are 9 variations.

With **a-m-i** (**p-m-i**)



With **m-i-a** (**m-i-p**)



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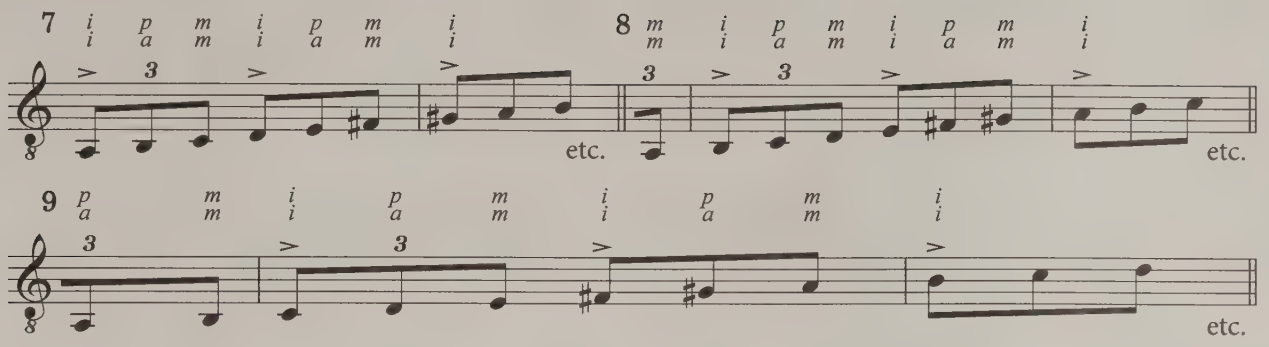
With **i-a-m (i-p-m)**



Scale Practicing Models in the Circle of Fifths

The following examples should inspire your creativity to invent other practicing models that address your individual needs.

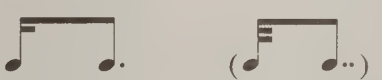
1. 24 Scales with Alternating Finger Patterns

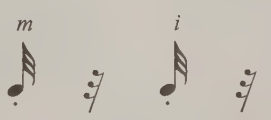
The circle of fifths is divided up into four groups of six scales each.
RH patterns **i-m / m-i** alternate with **m-a / a-m**. every two days.
Each scale is repeated 4×.

Group 1: **C Major, A Minor, G Major, E Minor, D Major** and **B Minor** are played with rhythmical, even sixteenth notes:

Group 2: **A Major, F♯ Minor, E Major, C♯ Minor, B Major** and **G♯ Minor** are played with a simple (or double) dotted rhythm:

Group 3: **F♯ Major, D♯ Minor, D♭ Major, B♭ Minor, A♭ Major** and **F Minor** are played with the reverse simple (or double) dotted rhythm:



Group 4: **E♭ Major, C Minor, B♭ Major, G Minor, F Major** and **D Minor** are practiced with a very short staccato, performed with a reflexive muting of the string by the following finger on the same or adjacent string (see "Staccato Reflex Development," p. 51).

Total practice time depending on the number of repetitions: 20 to 60 minutes. Tempo: moderato!

2. 24 Scales with Repetitions

The circle of fifths is divided into 8 × 3 = 24 scales.
RH patterns: **i-m, m-i, m-a, a-m, p-i, i-p, p-a-m-i, a-m-i-p** (tremolo)
Every scale is repeated 2×.

Repeated rhythm:

C Major, A Minor and G Major with **m – i**
E Minor, D Major and B Minor with **i – m**

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A Major, F♯ Minor and E Major	with	**a – m**
C♯ Minor, B Major and G♯ Minor	with	**m – a**
F♯ Major, D♯ Minor and D♭ Major	with	**p – i**
B♭ Minor, A♭ Major and F Minor	with	**i – p**
E♭ Major, C Minor and B♭ Major	with	**p – a – m – i**
G Minor, F Major and D Minor	with	**a – m – i – p**

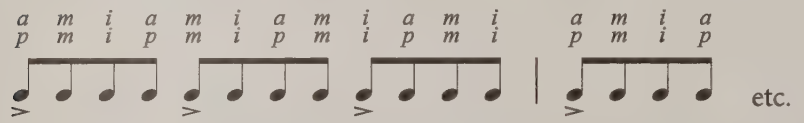
Total practice time is 20–60 minutes depending on the number of repetitions.
Tempo: flexible, adjusted to how fast you can play comfortably.

TIP

3. Using a-m-i and p-m-i in Four Note Groups

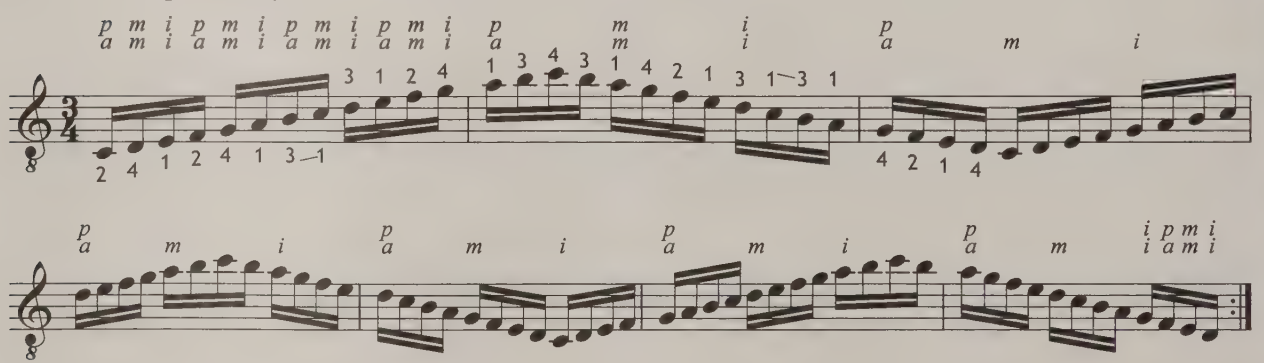
This is an especially effective practice model! If we separate the circle of fifths into two equal parts, both the RH patterns **a-m-i** and **p-m-i** can be utilized equally. We will be focussing on: position shifts, arpeggios, run technique involving difficult string crossings, LH agility and independence.

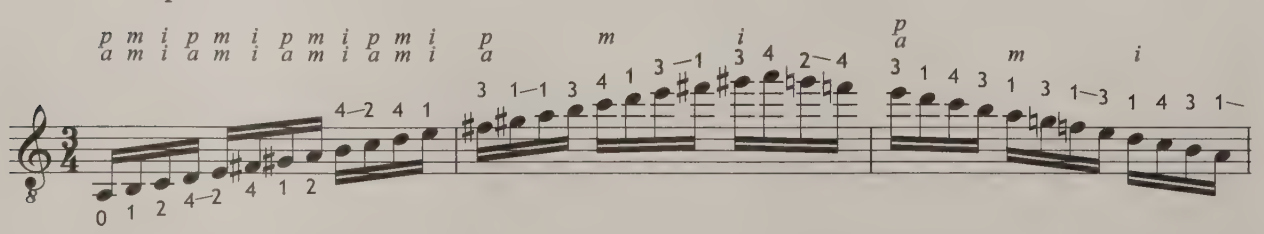
All 24 scales have to be adapted so that they balance out in groups of four (see p. 119). Every scale has to be repeated 3× in order to get back to your respective starting finger (the accent on the first note of each group of four notes remains, yet the finger that begins each group of four notes changes).



Due to the continually changing RH fingerings while crossing strings, these RH patterns are especially difficult but very effective.
It's advisable to write down your RH fingerings for the first scales so that you can start with the correct finger from any note in the exercise.

Scales over Two Octaves

Example: C Major

Scales over Three Octaves

Example: A Melodic Minor

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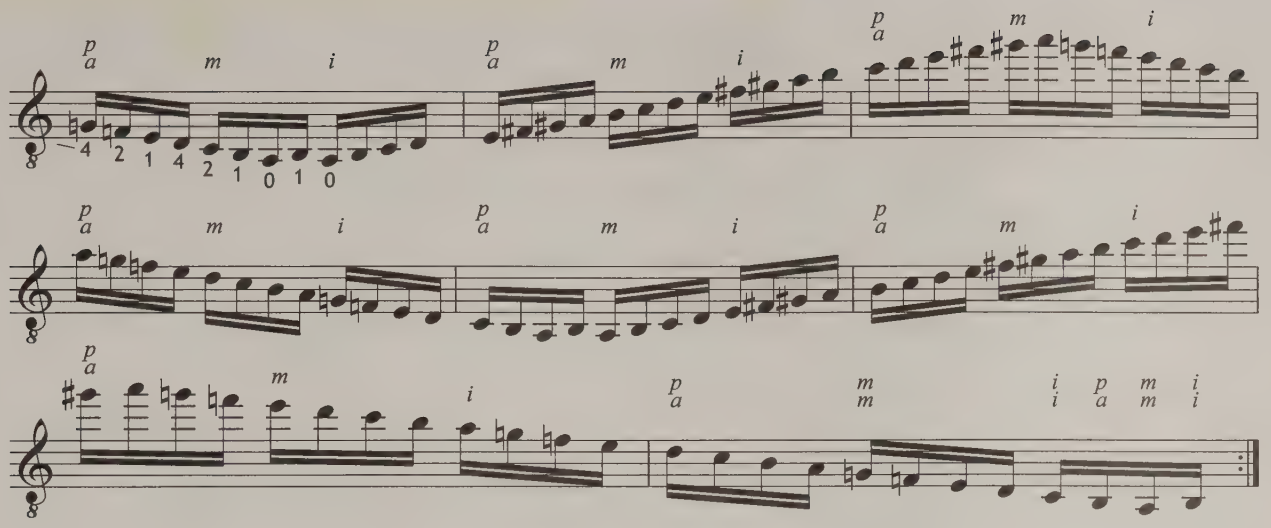


TIP

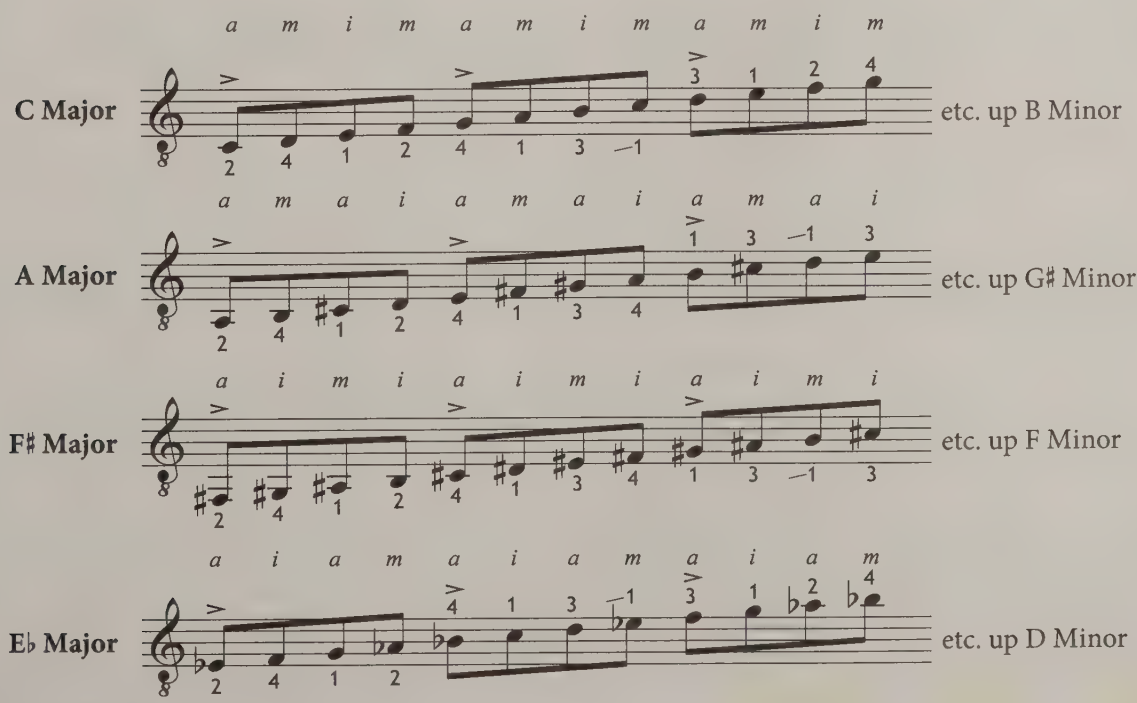
4. The Practicing Model of the 12 Basic Arpeggios (Excluding the Thumb)

The practicing goal of this model is, among other things, the training of even shaped groupings of four notes which make up more than half of all runs and scale-like passages found in the entire guitar repertoire. In addition to these LH scale techniques, arpeggios are also trained – the ideal combination of fundamental techniques. Here too the continual alternating of RH fingerings while crossing strings is a major challenge. In a circle of fifths only 4 basic arpeggios can be executed. To be able to realize all 12, you have to repeat the circle of fifths 3×. Each scale is performed at least 2×.

Caution! **Connecting the following scales should occur without interruption, even if you have to jump to reach a new position. By dividing the scales into groups of four notes, you can play through the entire model without stopping. The alternating of RH patterns should also occur without interruption.**

Circle of Fifths – First Time

Group 1 = 6 Scales (C Major, A Minor, G Major, E Minor, D Major and B Minor) = **a-m-i-m**
Group 2 = 6 Scales (A Major, F♯ Minor, E Major, C♯ Minor, B Major and G♯ Minor) = **a-m-a-i**
Group 3 = 6 Scales (F♯ Major, D♯ Minor, D♭ Major, B♭ Minor, A♭ Major and F Minor) = **a-i-m-i**
Group 4 = 6 Scales (E♭ Major, C Minor, B♭ Major, G Minor, F Major and D Minor) = **a-i-a-m**



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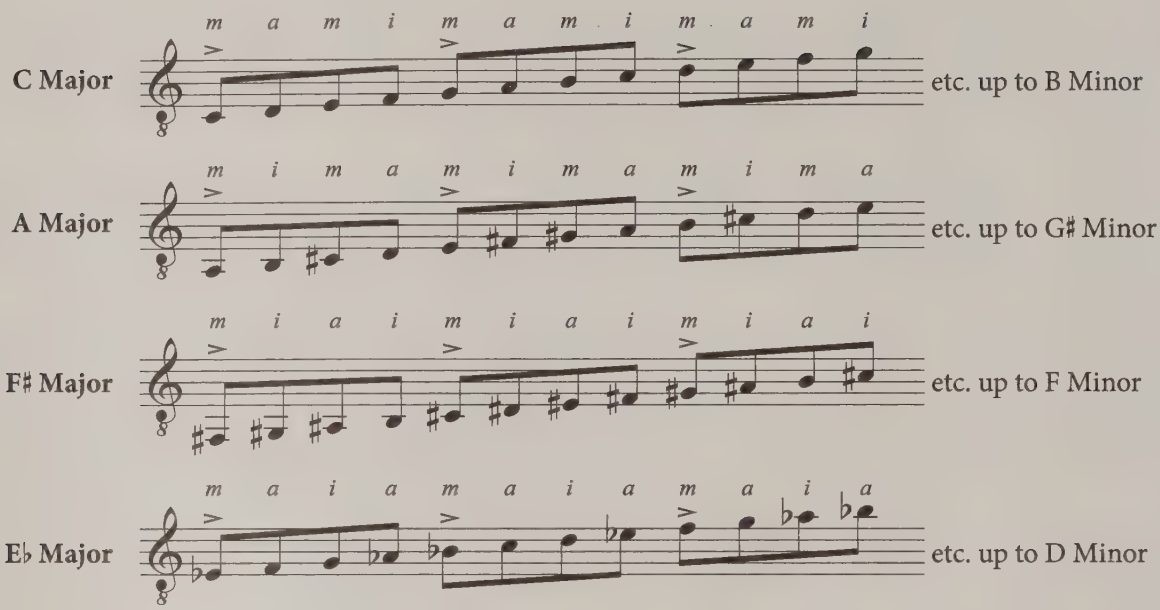
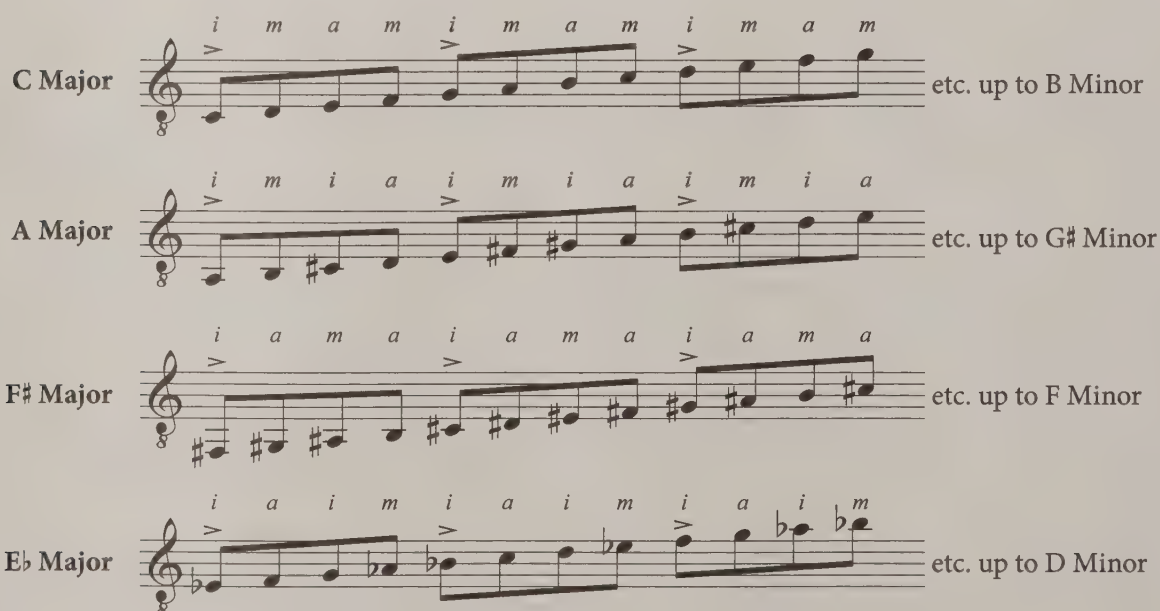
Circle of Fifths – Second Time

Group 1 = 6 Scales = **m-a-m-i**
Group 2 = 6 Scales = **m-i-m-a**
Group 3 = 6 Scales = **m-i-a-i**
Group 4 = 6 Scales = **m-a-i-a**


C Major
m a m i m a m i m a m i
etc. up to B Minor
A Major
m i m a m i m a m i m a
etc. up to G♯ Minor
F♯ Major
m i a i m i a i m i a i
etc. up to F Minor
E♭ Major
m a i a m a i a m a i a
etc. up to D Minor

Circle of Fifths – Third Time

Group 1 = 6 Scales = **i-m-a-m**
Group 2 = 6 Scales = **i-m-i-a**
Group 3 = 6 Scales = **i-a-m-a**
Group 4 = 6 Scales = **i-a-i-m**


C Major
i m a m i m a m i m a m
etc. up to B Minor
A Major
i m i a i m i a i m i a
etc. up to G♯ Minor
F♯ Major
i a m a i a m a i a m a
etc. up to F Minor
E♭ Major
i a i m i a i m i a i m
etc. up to D Minor

It is recommended to play just one patternn per day at the beginning.

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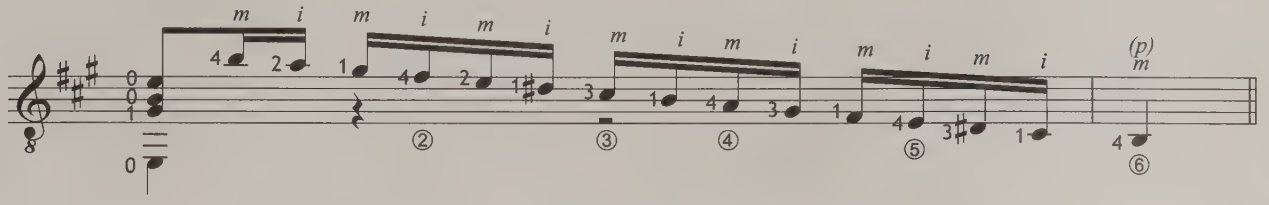
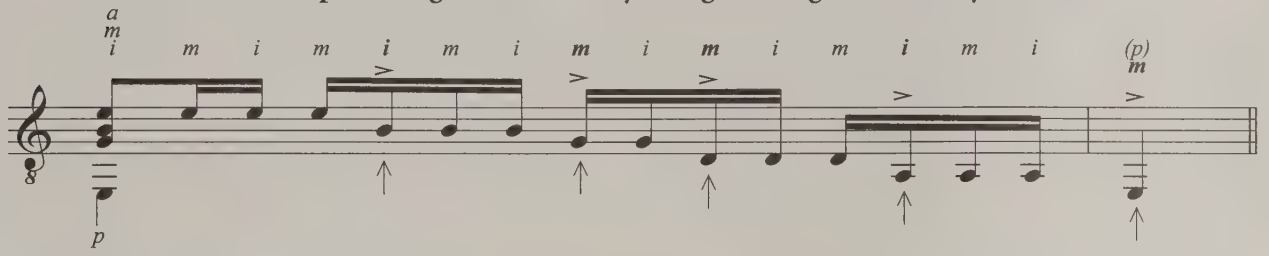
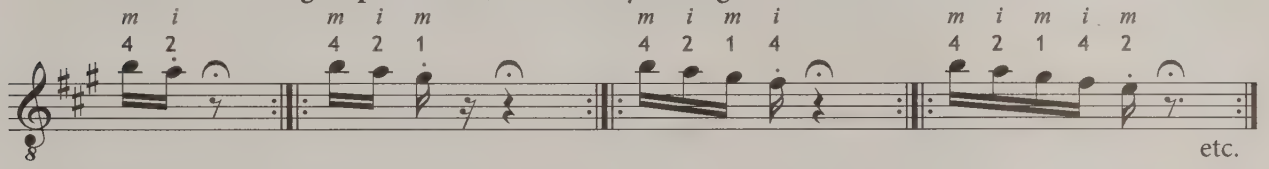
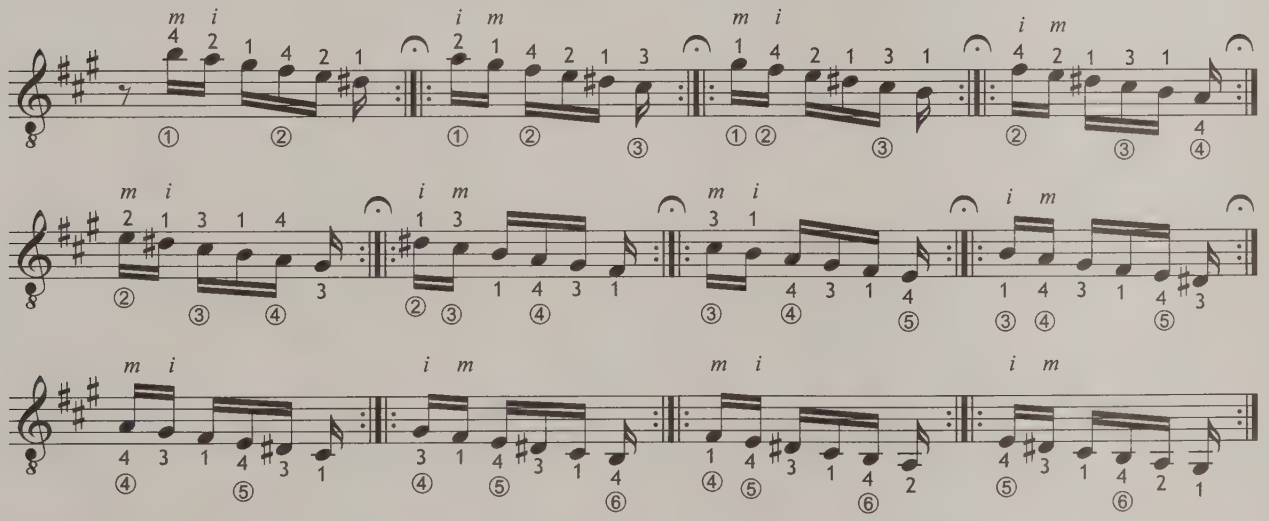
Practicing an Original Run Chosen from the Repertoire

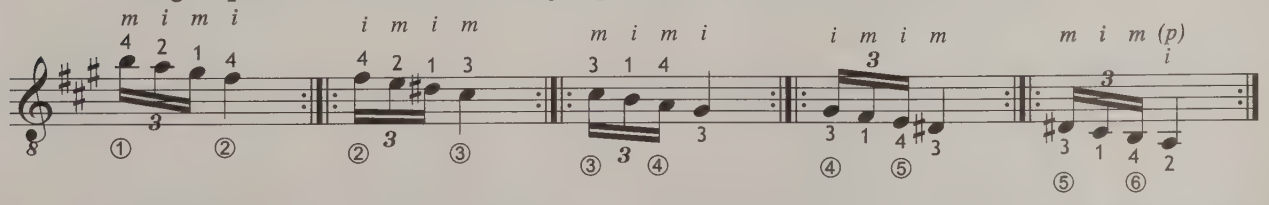
From Mauro Giuliani's "Sonata Eroica" op. 150, Measure 99

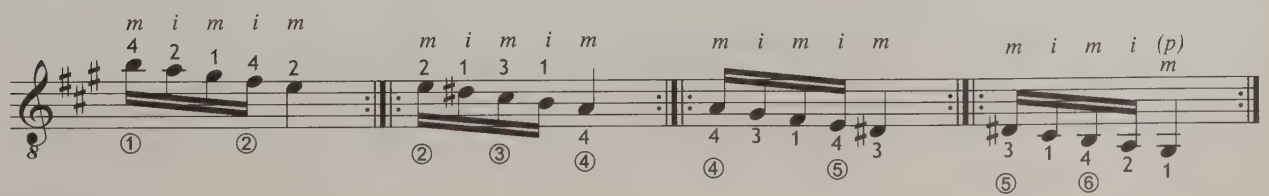


The same run on open strings in which every string crossing is marked by an accent

The run in short groups of notes, continually adding one note:



"Shifting" a 6 note group (run extended):

Short groups of notes with alternating triplets and quarter notes (run extended):



Short groups of notes with alternating 16th note groups of four notes each and quarter notes (run extended):

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IV. Ascending and Descending Slurs in the Left Hand

With ascending and descending slurs, the actual note is produced by the LH. A perfect legato is the result. The sequence of motions involved in ascending and descending slurs is described in detail on page 31.

LH slurs are ideal exercises for strengthening the muscles in your LH fingers. Furthermore, they also promote the agility of the fingers and are one of the four main guitar techniques absolutely necessary for any practicing program.

Practicing Goals

1. A note produced by the LH alone cannot be allowed to be too soft. It has to be adjusted to the tone played by the RH.
2. Be mindful of rhythmical, even notes.
3. After an ascending slur, shift the pressure from your lower finger to the slur finger or from the finger which pulls off to your lower finger.

Immediately Changing from the Treble to the Bass Strings

It's perfectly good to perform the exercises on four strings. To improve the tactile sense of your fingers regarding the various string tensions and to find just the right amount of pressure, the exercises are played alternately on a treble and a bass string. The order of the strings to be played is:

1. e' string = 1st string
2. E string = 6th string
3. b string = 2nd string
4. A string = 5th string

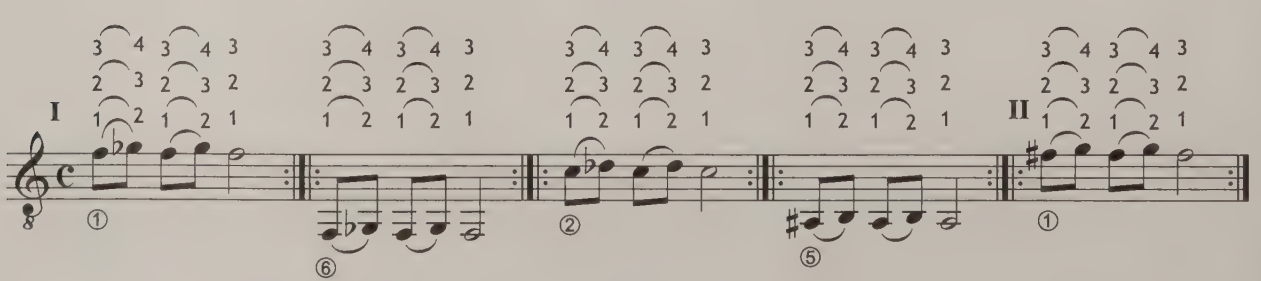
Slurs with Two Fingers

1 Ascending Two Note Slurs

Even development of the muscles of the LH demands practicing all 6 of the two note combinations that are possible with four fingers:

1-2 2-3 3-4 1-3 2-4 1-4

In order to be able to concentrate on performing the slurs, you should avoid string crossings and shifts.
Principally you should begin at the 1st fret (position I) – also with 3-4, 2-3 and 2-4 – so that the slur, for example 3-4, is made as difficult as possible. In a higher position, the 3-4 slur will then be perceived as being "easy."

From the 1st to the 5th fret:

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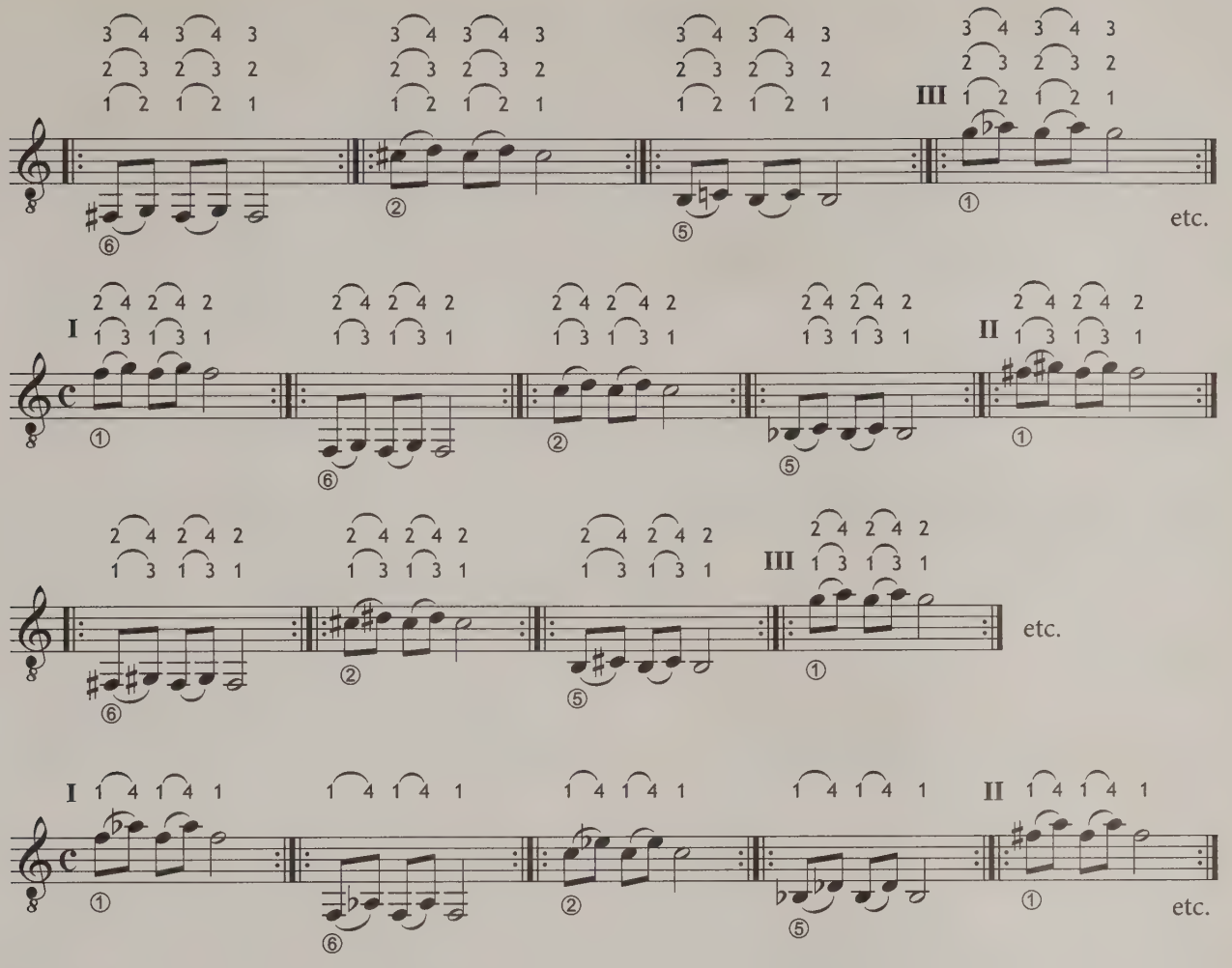
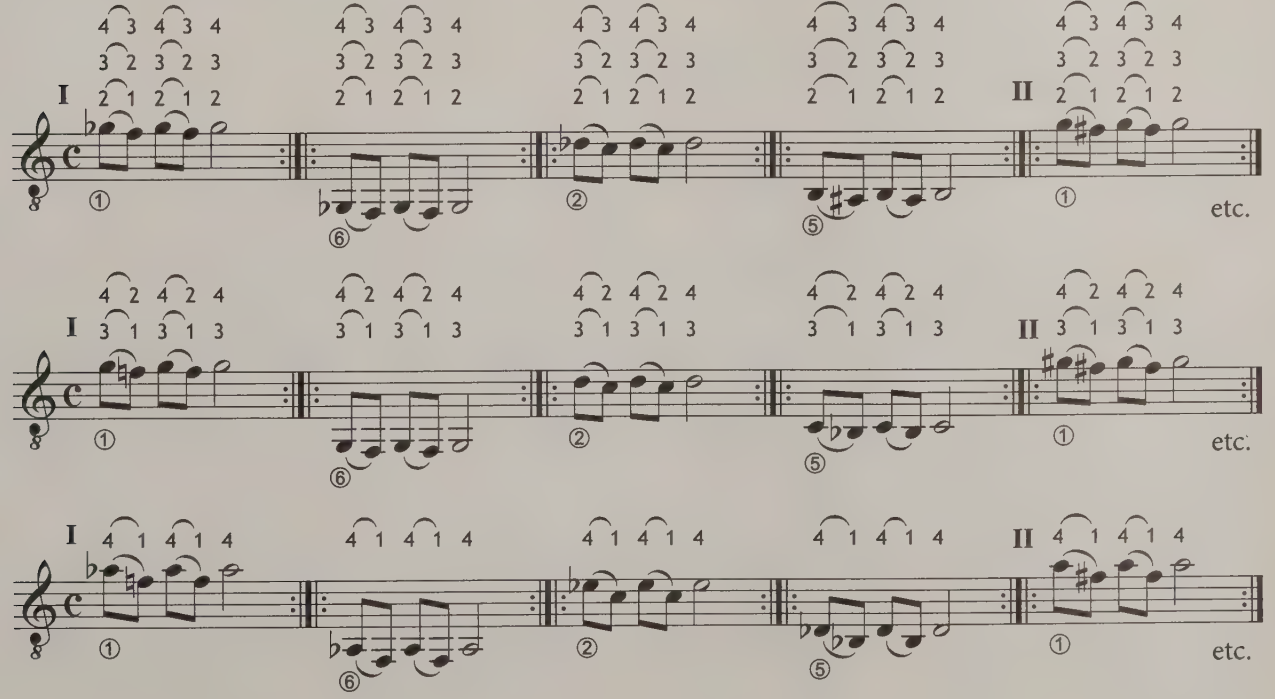


2 Descending Two Note Slurs

With 6 combinations 2-1, 3-2, 4-3, 3-1, 4-2 and 4-1 from the 1st to the 5th fret:



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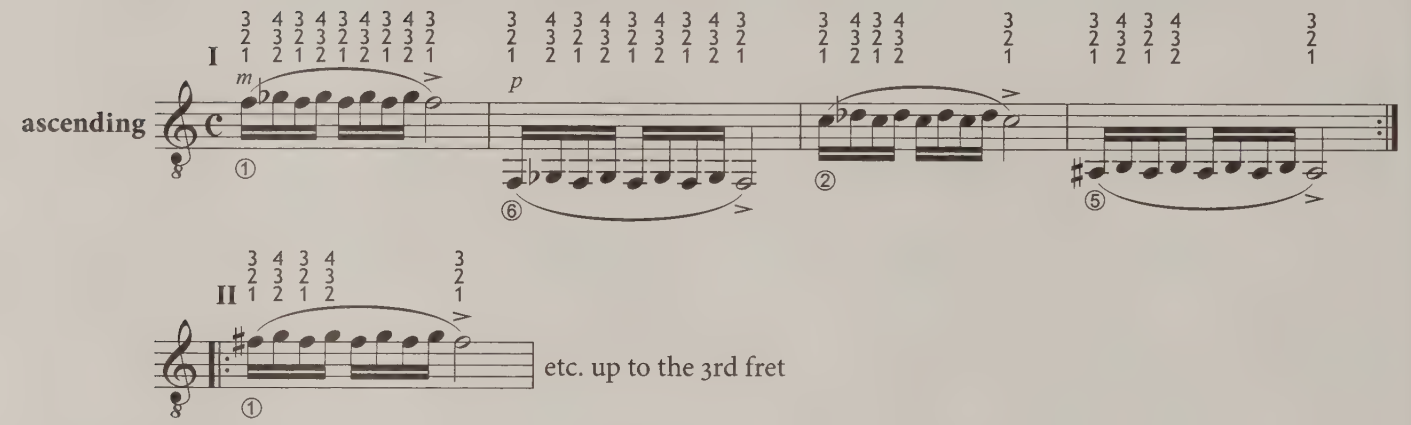
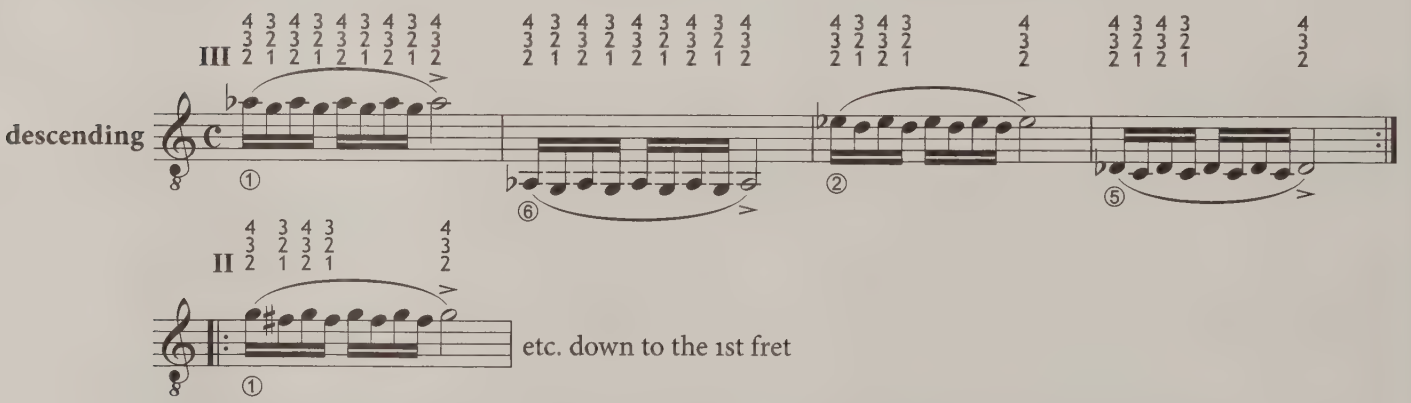
3 Combining Ascending and Descending Slurs

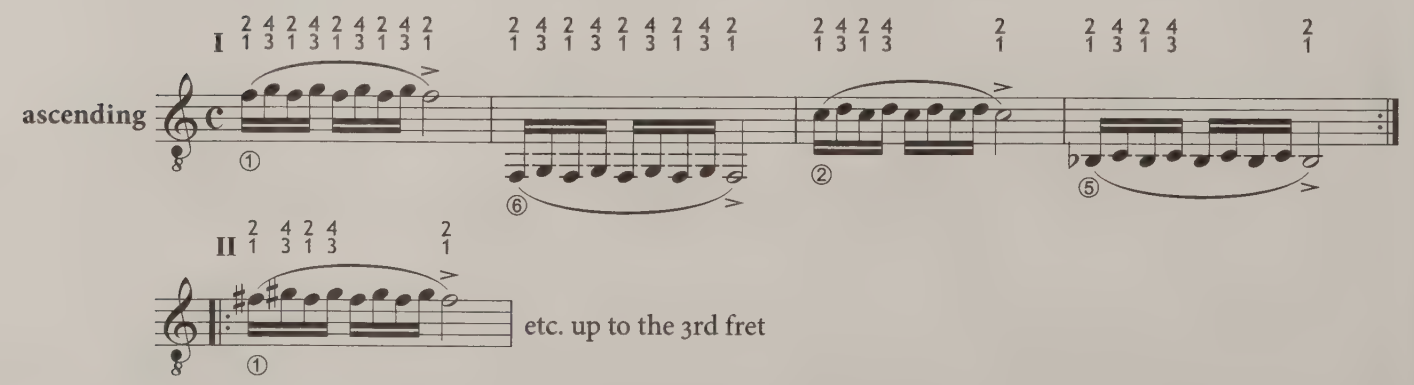
With the exception of the first note of an exercise, all remaining notes are generated clearly and evenly **with the LH only**. The accent must also be distinctly audible, created either by a more forceful placement on or pulling off the finger towards the adjacent string. The exercise should be played **at the minimum** up to the third fret and, with the reverse LH fingerings, from the third to the first fret.

With 1-2-1-2; 2-3-2-3; 3-4-3-4; 1-3-1-3; 2-4-2-4; 1-4-1-4 from the 1st to the 3rd fret.

With 2-1-2-1; 3-2-3-2; 4-3-4-3; 3-1-3-1; 4-2-4-2; 4-1-4-1 from the 3rd to the 1st fret.







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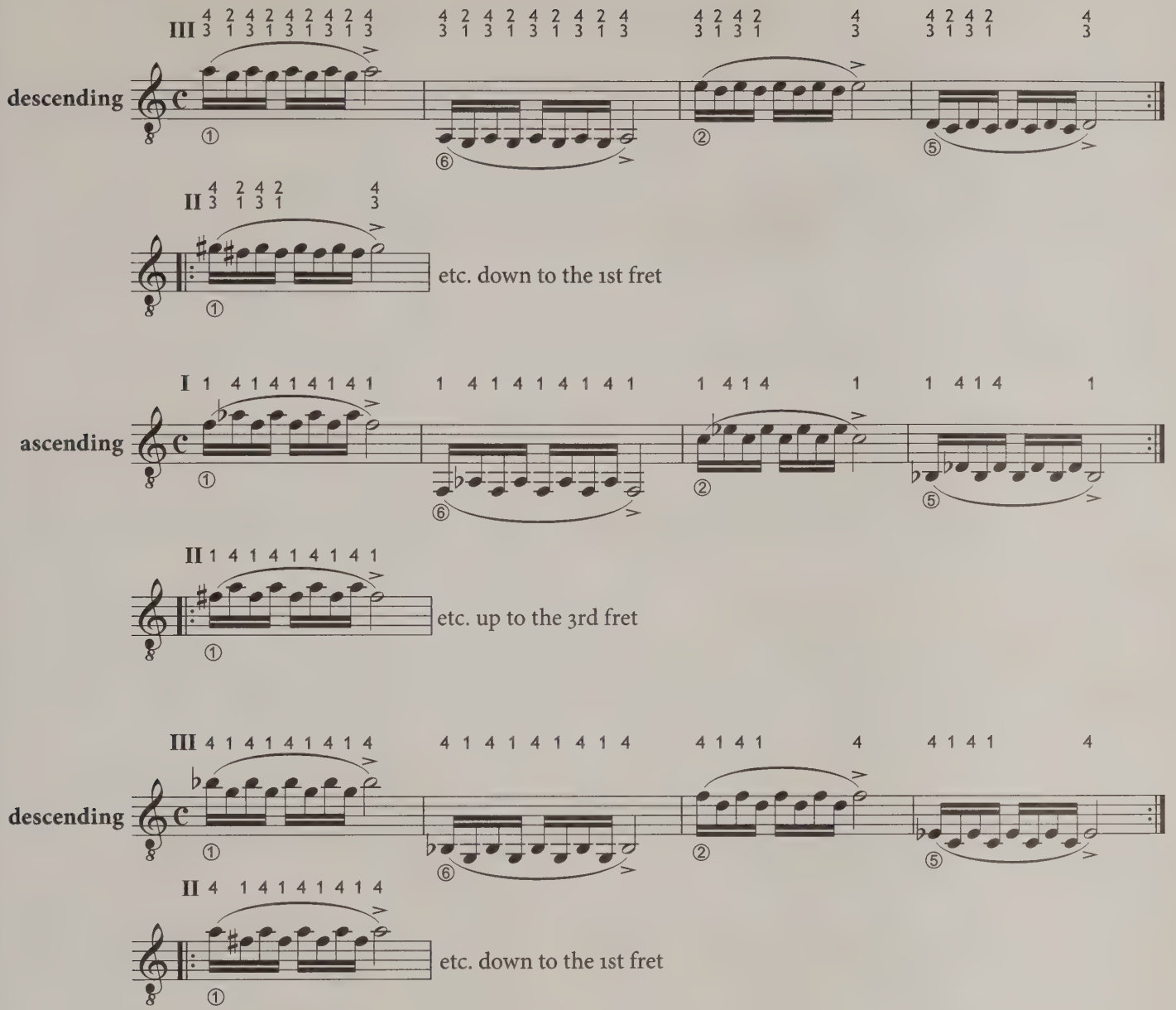
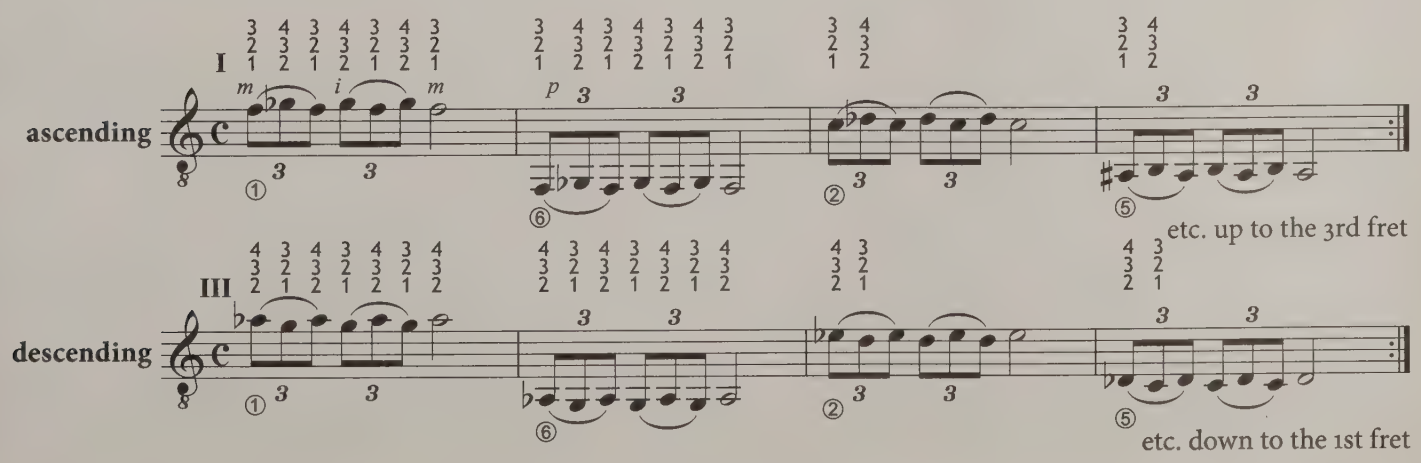


Two Note Slurs as Triplets

TIP 4 The alternating accents in triplet slurs using two fingers effectively train switching between the ascending and descending slurs and their reverse. Very effective!

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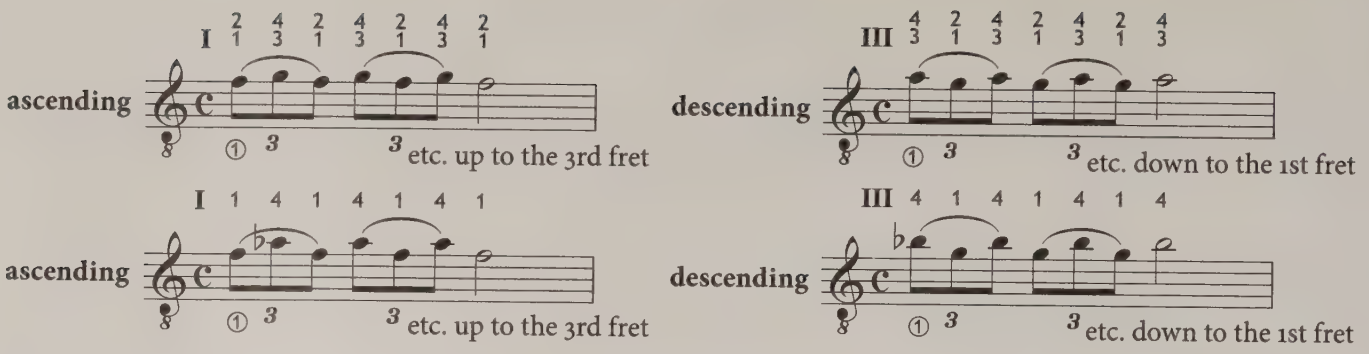
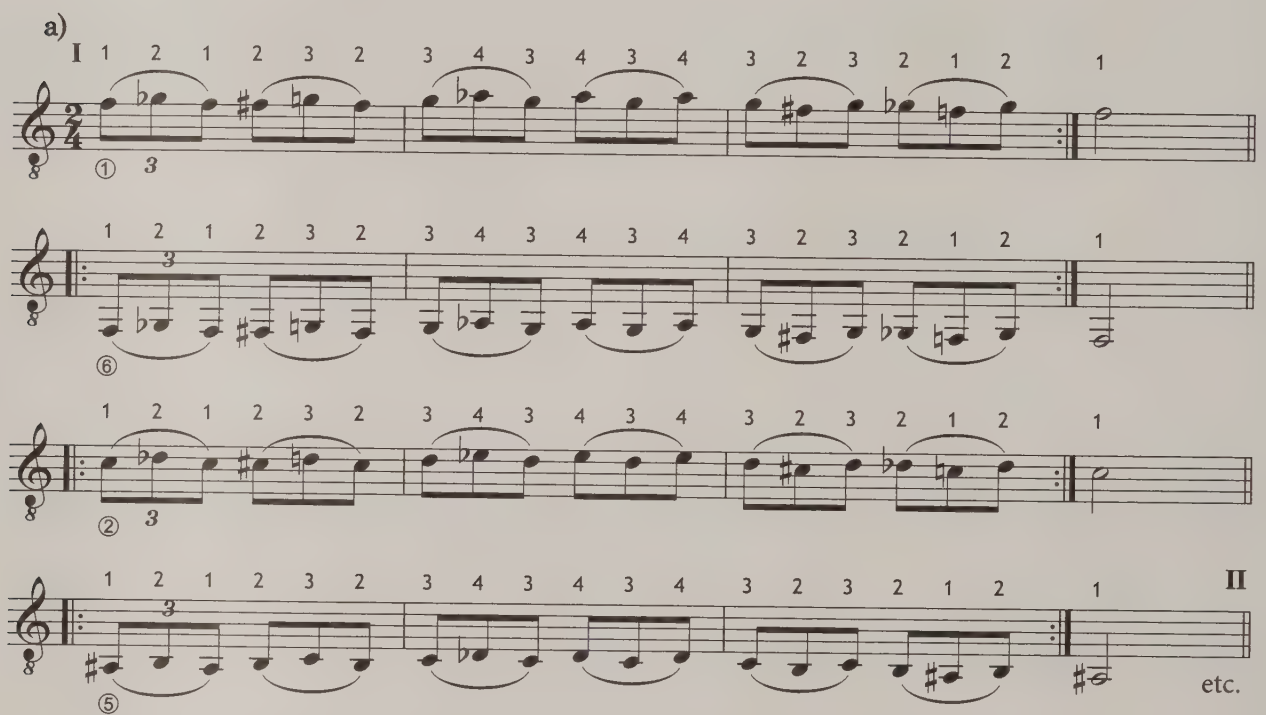
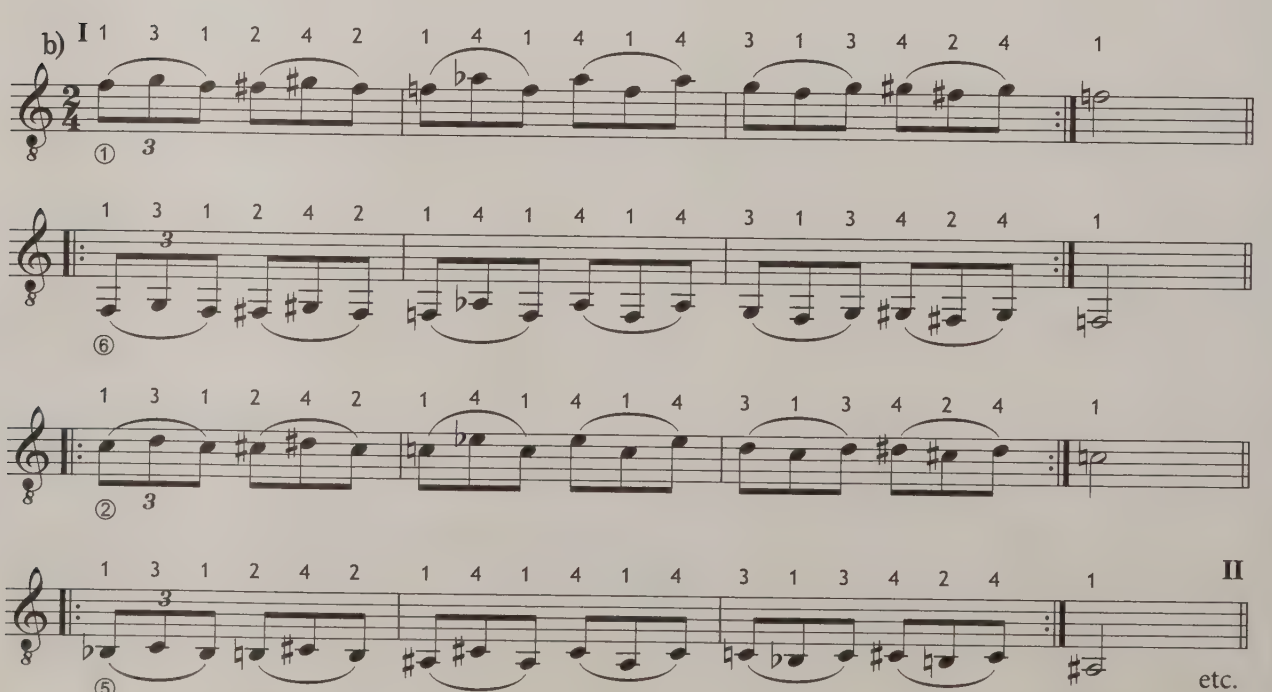


5 Complex Two Note Slurs as Triplets





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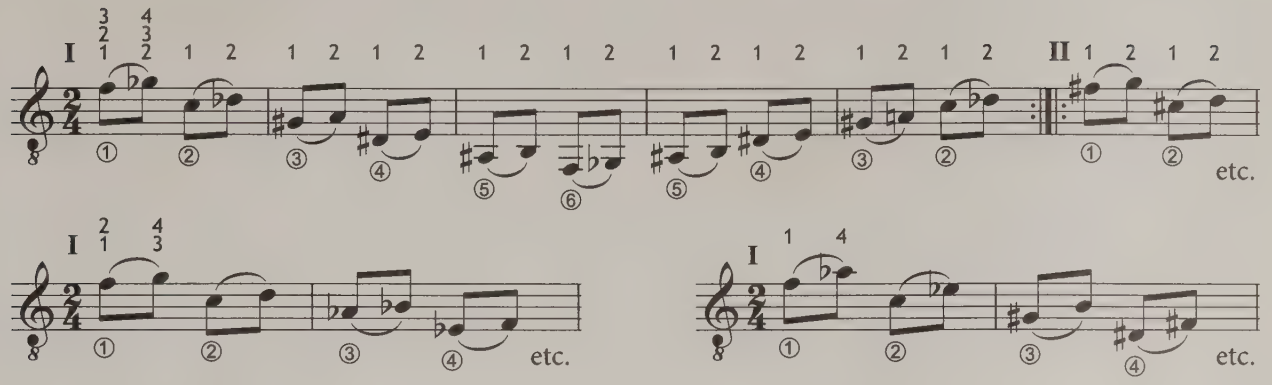
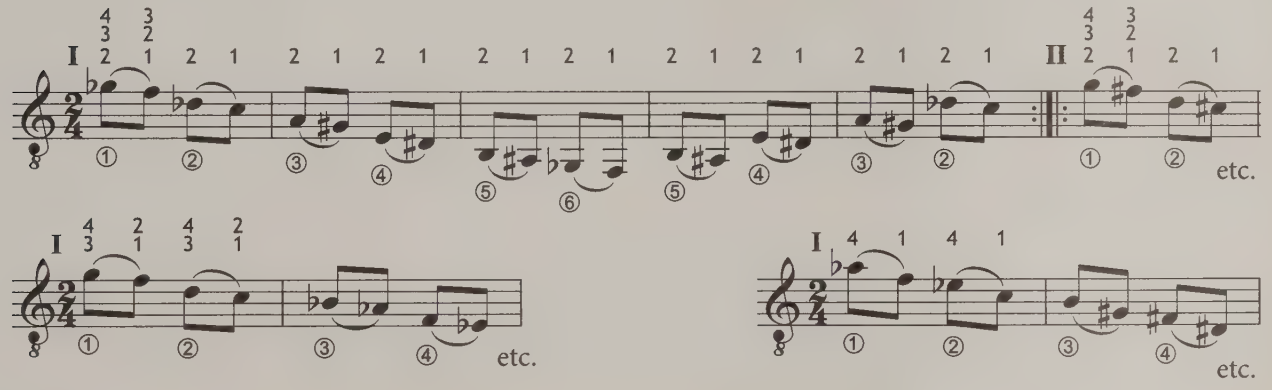
6 Ascending Two Note Slurs While Crossing Strings

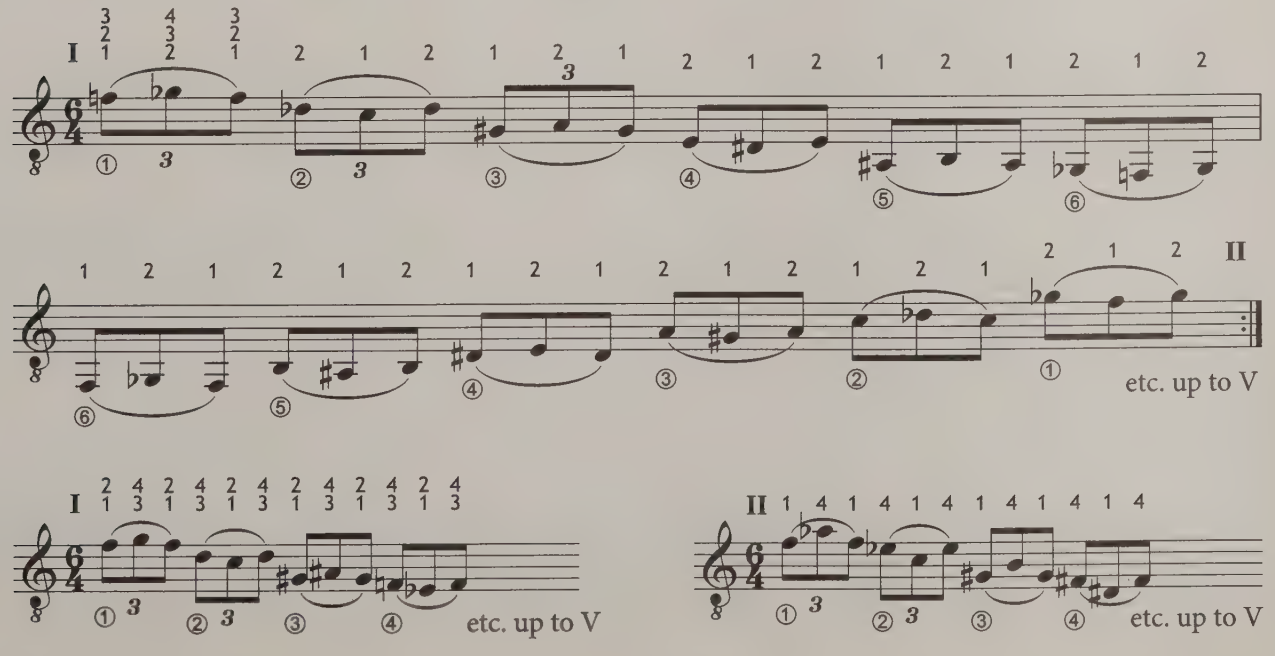
Here both fingers are in motion. Practice from the 1st to the 5th fret.



7 Descending Two Note Slurs While Crossing Strings

Shortly after the placement of the finger which pulls off towards the adjacent string, the lower finger has to be placed quickly and securely on the new string. Practice from the 1st to the 5th fret.

8 Two Note Slurs as Triplets While Crossing Strings

Both fingers are in motion. The lower finger has to be placed securely on the string.



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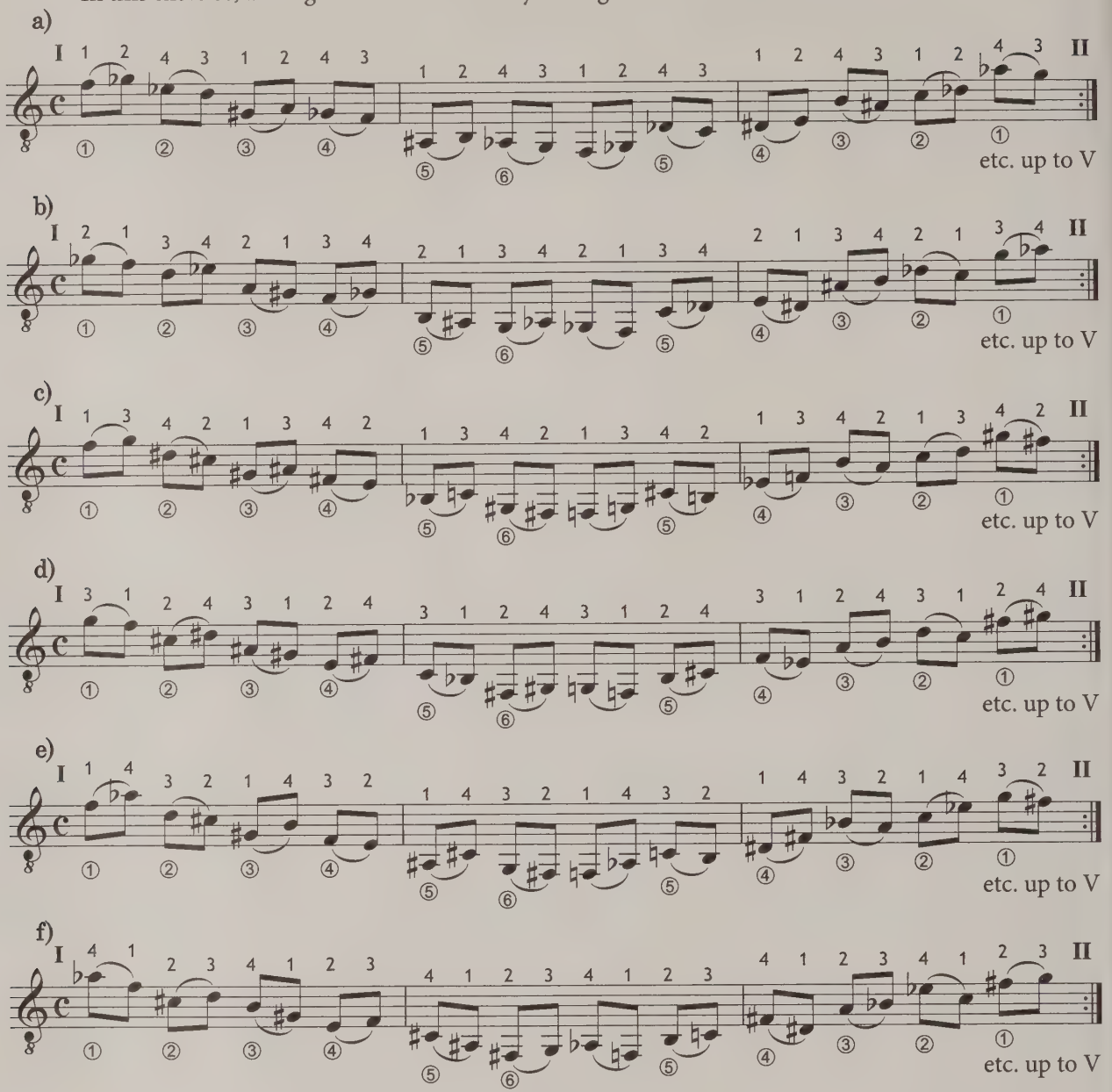
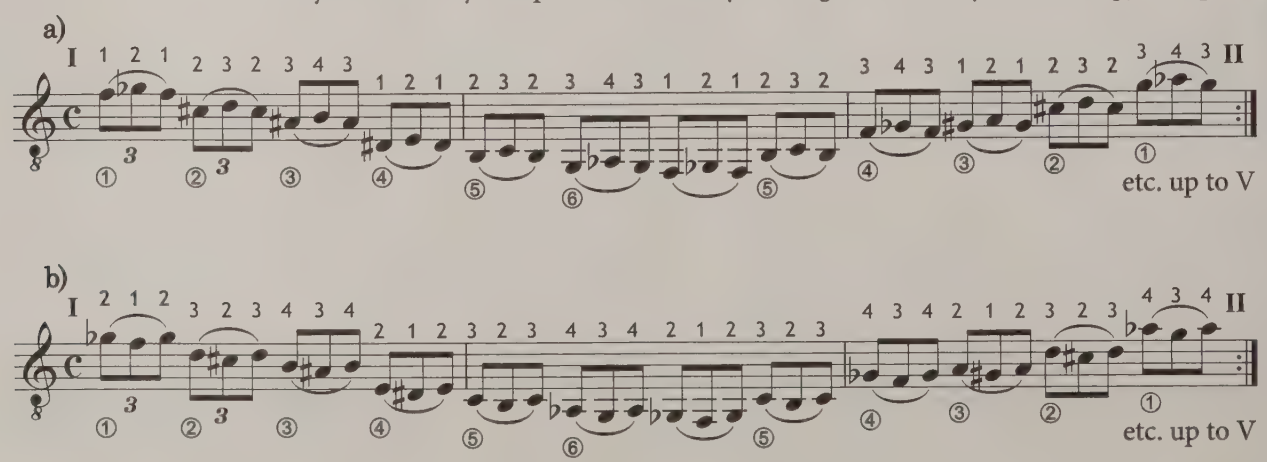
TIP 9 Two Note Slur Combinations While Crossing Strings

In this exercise, all fingers are trained evenly through the various slurs.



TIP 10 Two Note Slur Combinations as Triplets While Crossing Strings

With this exercise you can always keep the muscles of your fingers necessary for slurring in shape.

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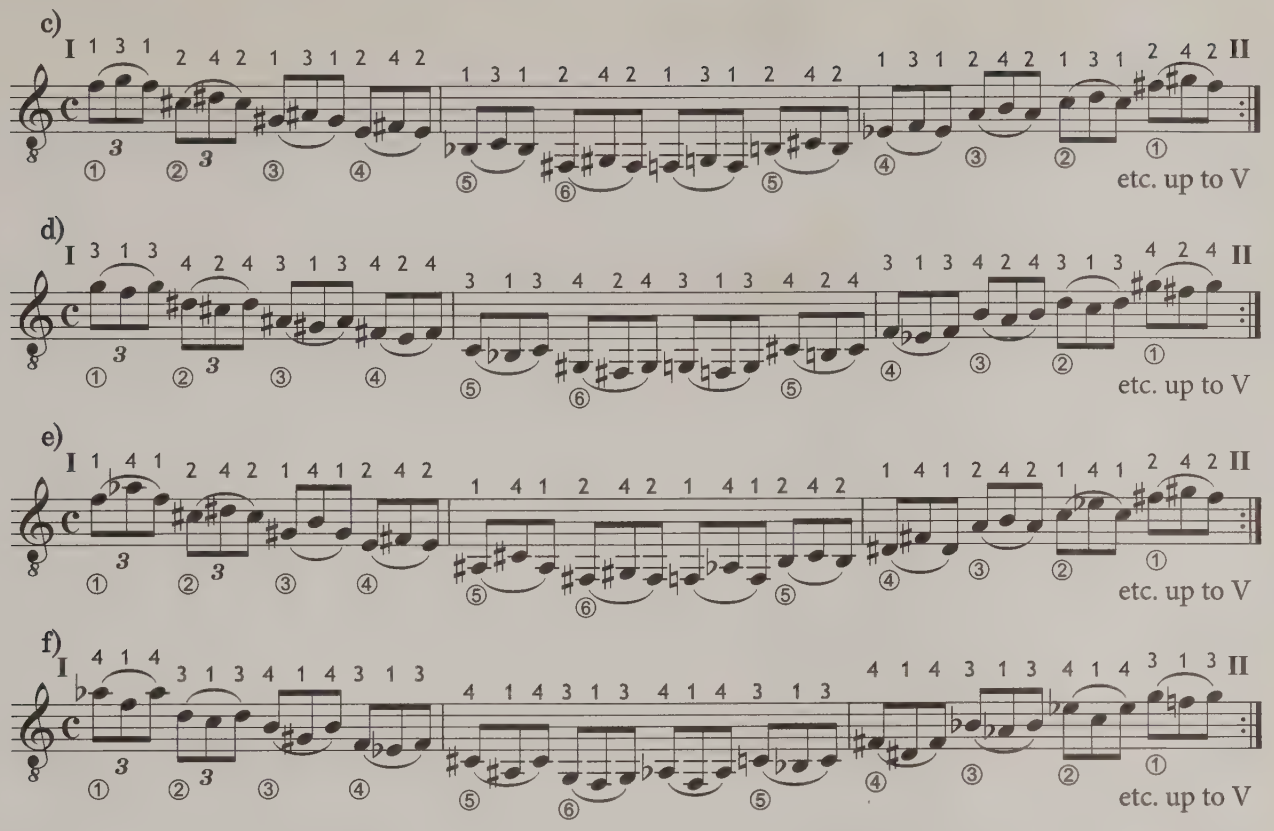

Slurs with Three Fingers

With ascending and descending slurs using three fingers, four groups of six combinations each are formed (see also Exercise 40, p. 107):
Two diatonic groups - related to the scale preparatory studies - classified into ascending, i.e. from position I to III, and descending, i.e. from position III to I, combinations:

	ASCENDING	DESCENDING
Group 1	1 2 4	4 2 1
	2 4 1	1 4 2
	4 1 2	2 1 4
Group 2	1 3 4	4 3 1
	3 4 1	1 4 3
	4 1 3	3 1 4

and two chromatic groups:

Group 3	1 2 3	3 2 1
	2 3 1	1 3 2
	3 1 2	2 1 3
Group 4	2 3 4	4 3 2
	3 4 2	2 4 3
	4 2 3	3 2 4

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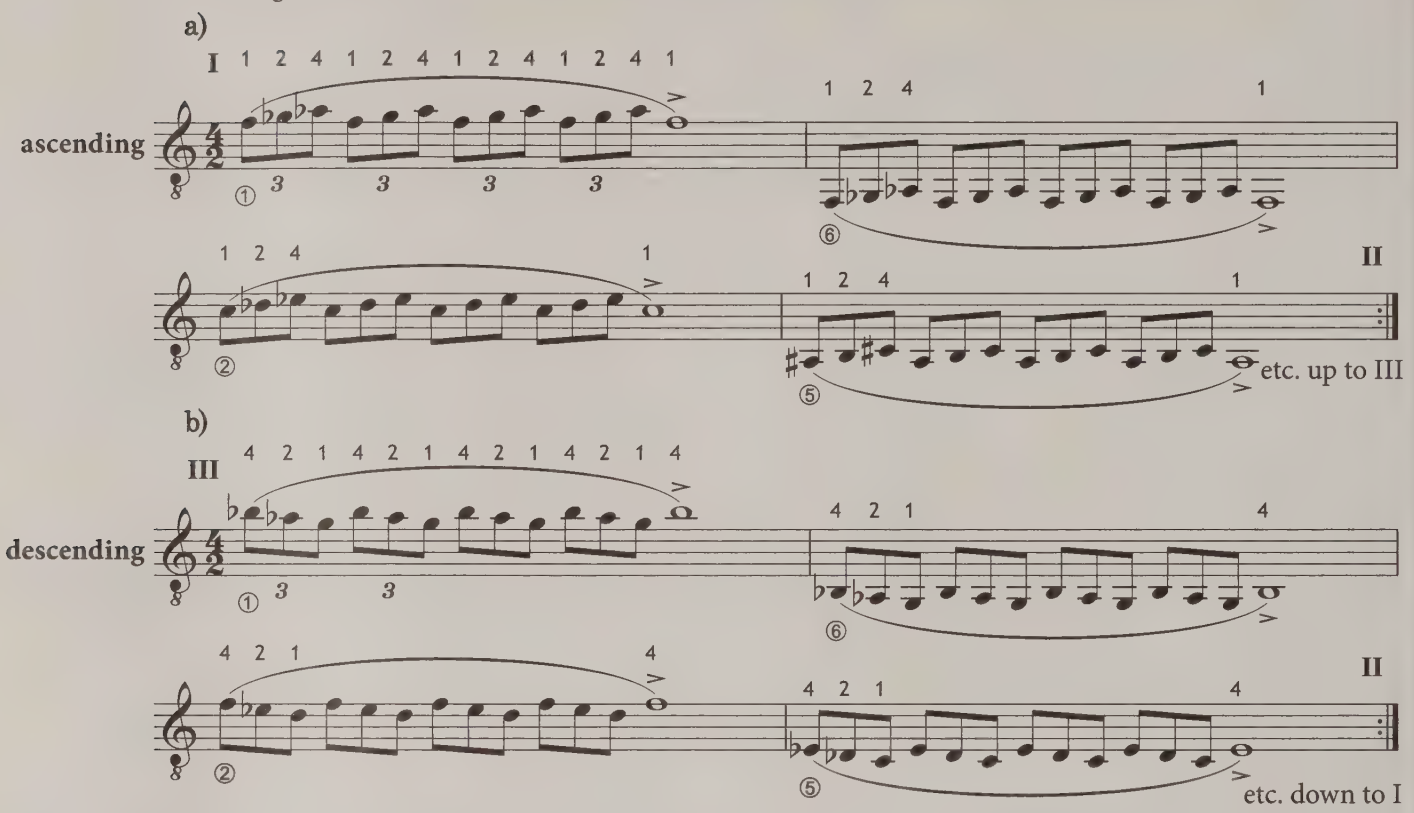
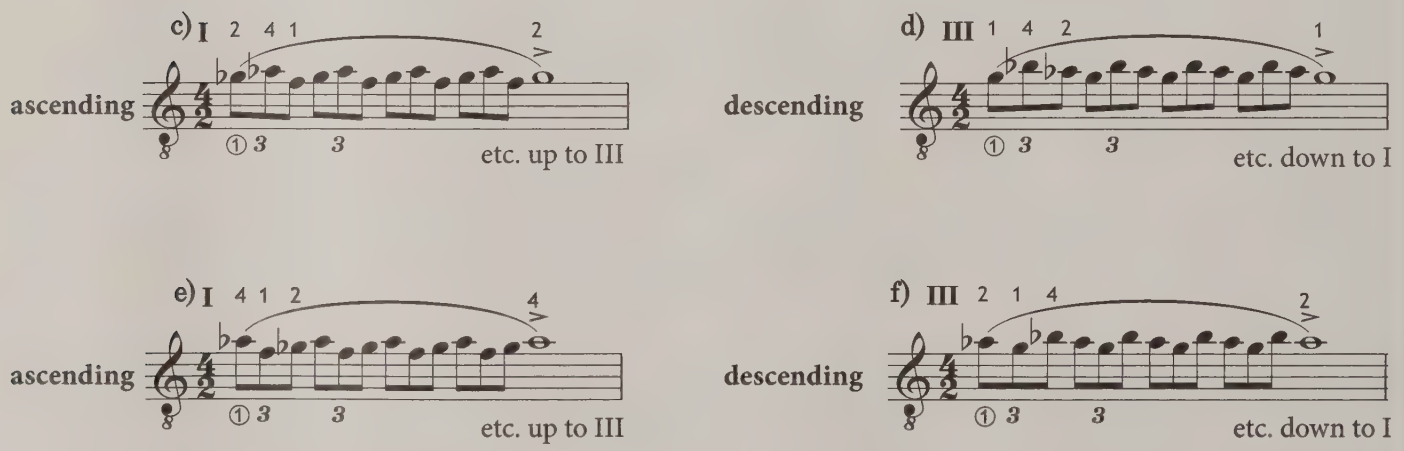
11 Group 1 Diatonic – Triplet Slurs

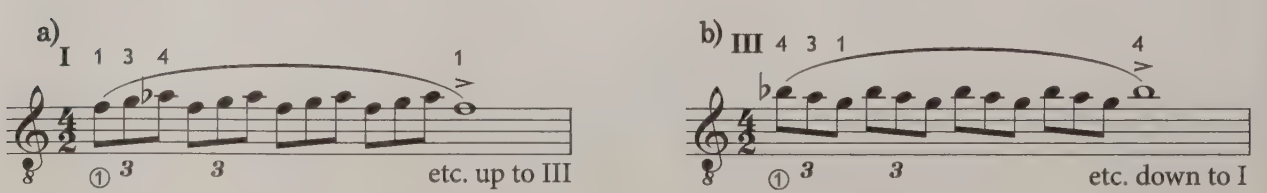
With the exception of the first note, all other notes are generated through slurs performed with the fingers of the LH.





12 Group 2 Diatonic – Triplet Slurs

With the exception of the first note, all other notes are generated through slurs performed with the fingers of the LH.



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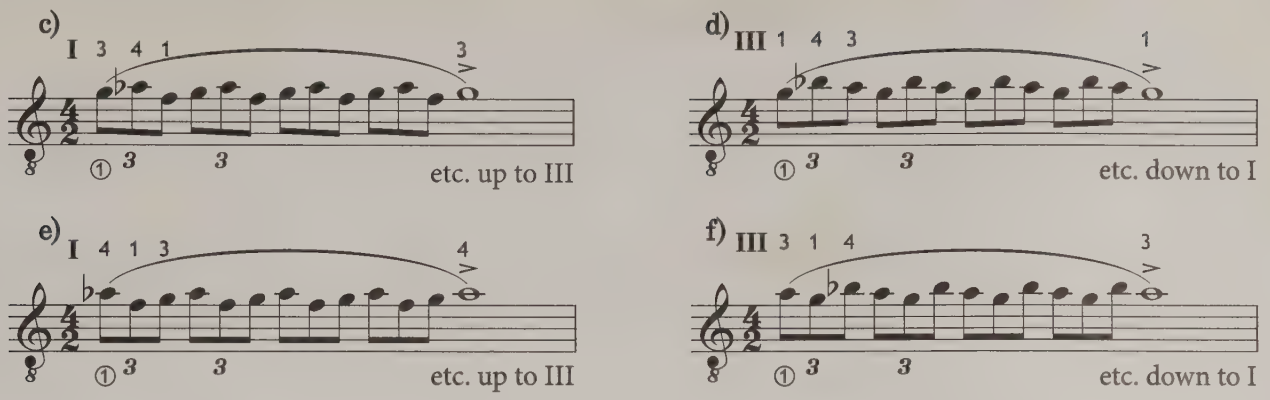
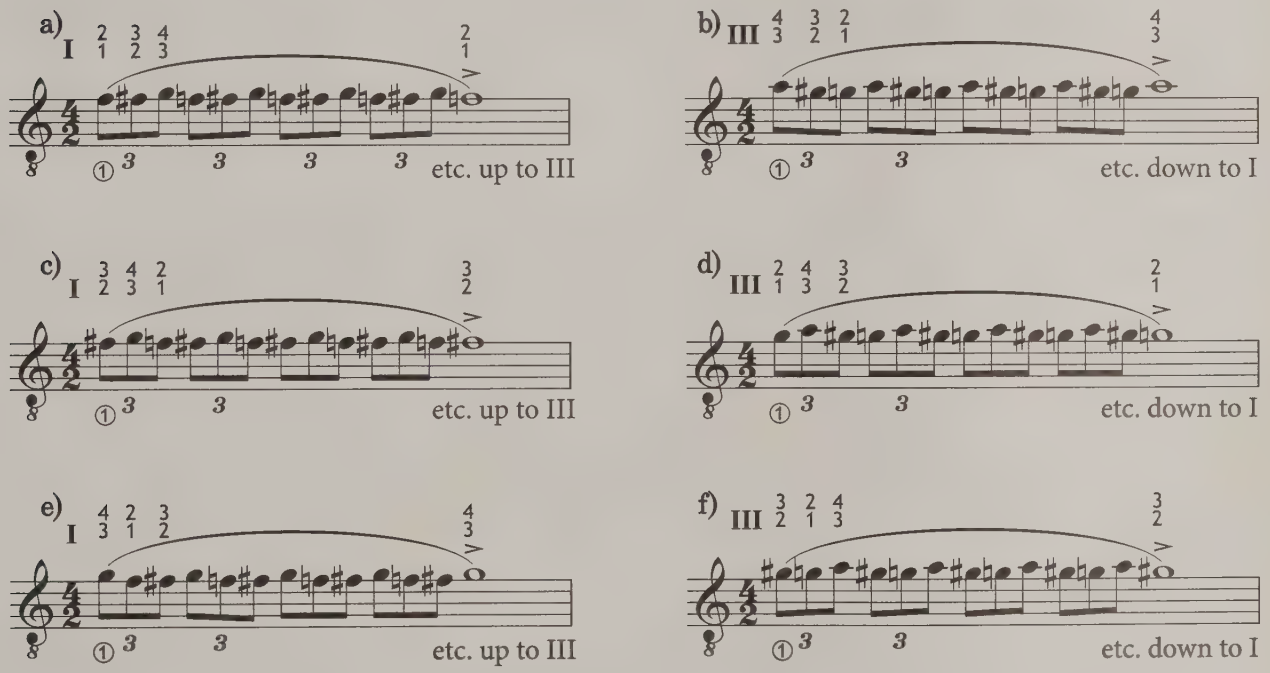


13 Groups 3 and 4 Chromatic – Triplet Slurs

The notes in both chromatic groups are identical, only the fingerings in the LH change! With the exception of the first note, all other notes are produced through slurs performed with the fingers of the LH.

TIP

It's especially effective to take on one chromatic and one diatonic group the first day and then both the other chromatic and diatonic groups the second day. By regularly practicing this way over a longer period, you will be building a solid foundation for perfect LH slur technique.

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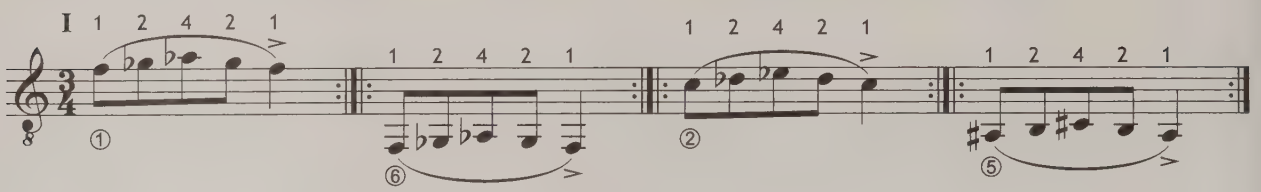
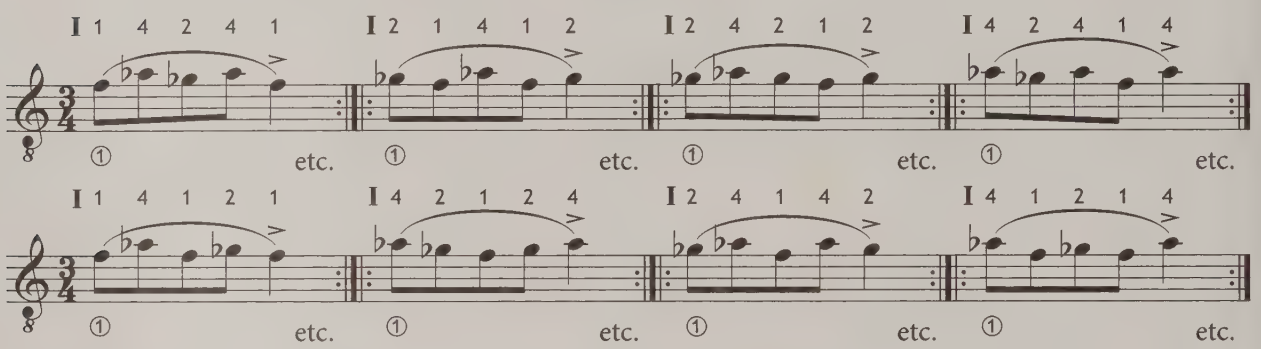
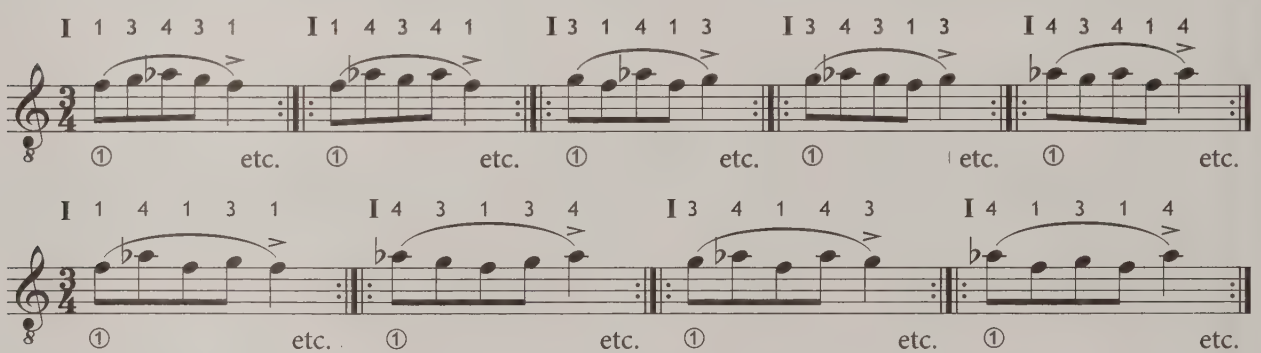
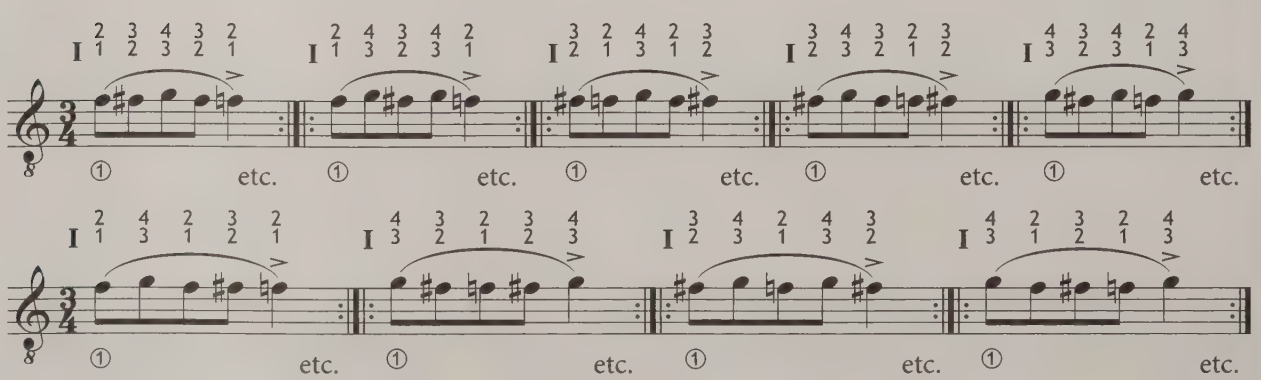
14 Slurs with Three Fingers Divided into Four Note Groups

The following exercises appear frequently in the guitar repertoire.

a) With 1 2 4

Practice all further combinations on ⑥, ②, ⑤ and also and up to position V!

b) With 1 3 4



c) With 1 2 3 and 2 3 4

With the following chromatic phrases, the notes are identical and only the fingerings change. The exercises with 2-3-4 are more difficult but important for the development of LH slur technique.

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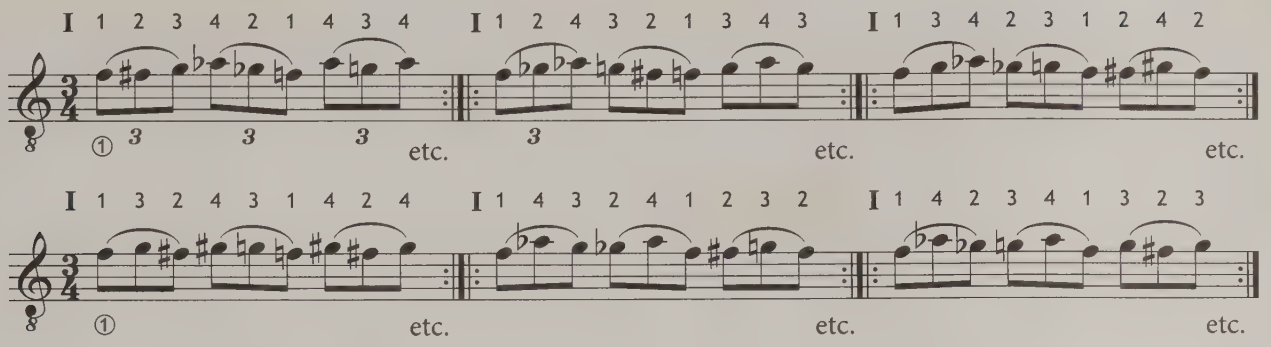
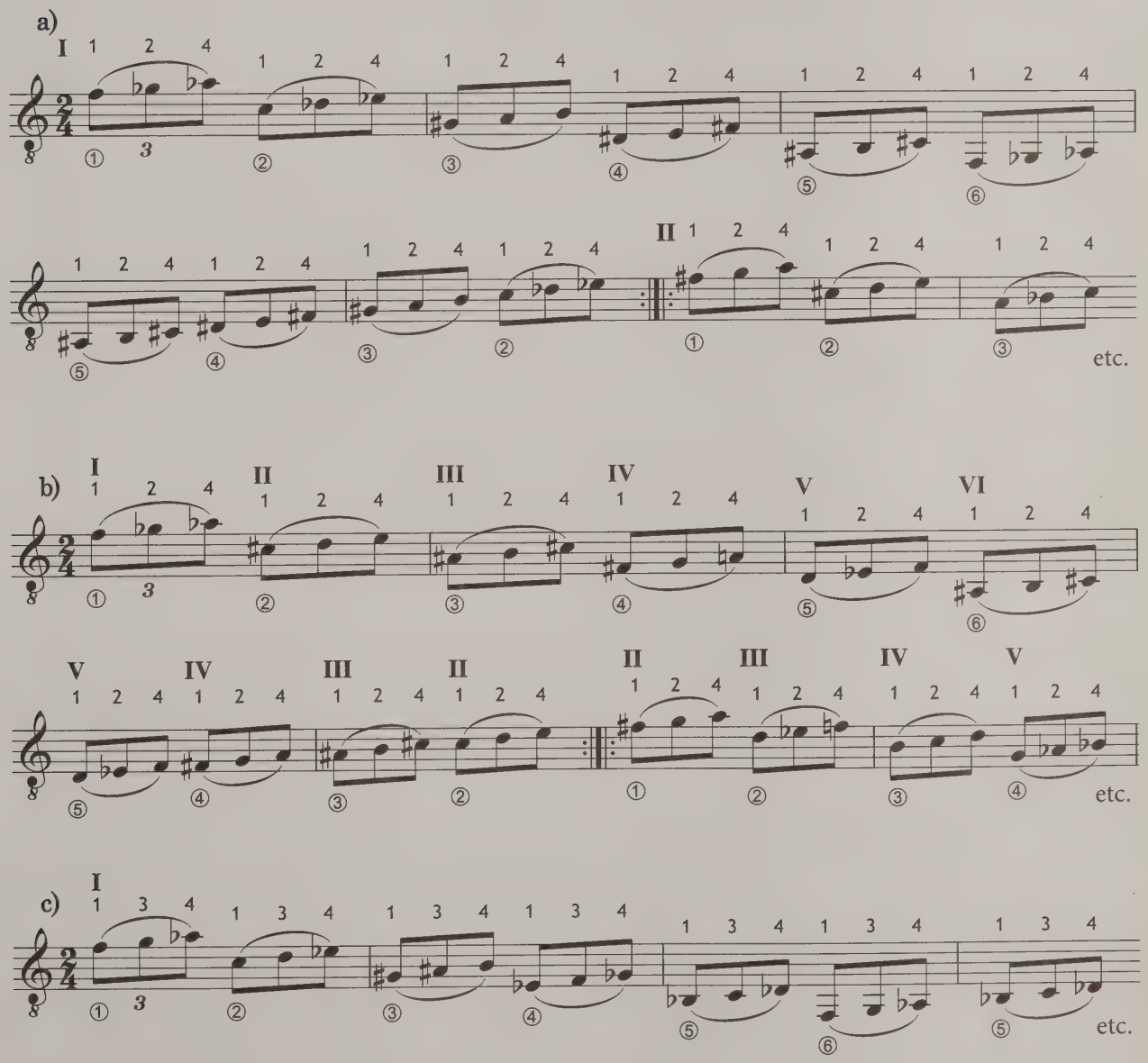
15 Combining Two and Three Note Slur Combinations

16 Ascending Slurs with Three Fingers While Crossing Strings

Only the most common combinations from the repertoire are presented here: 1-2-4 and 1-3-4.



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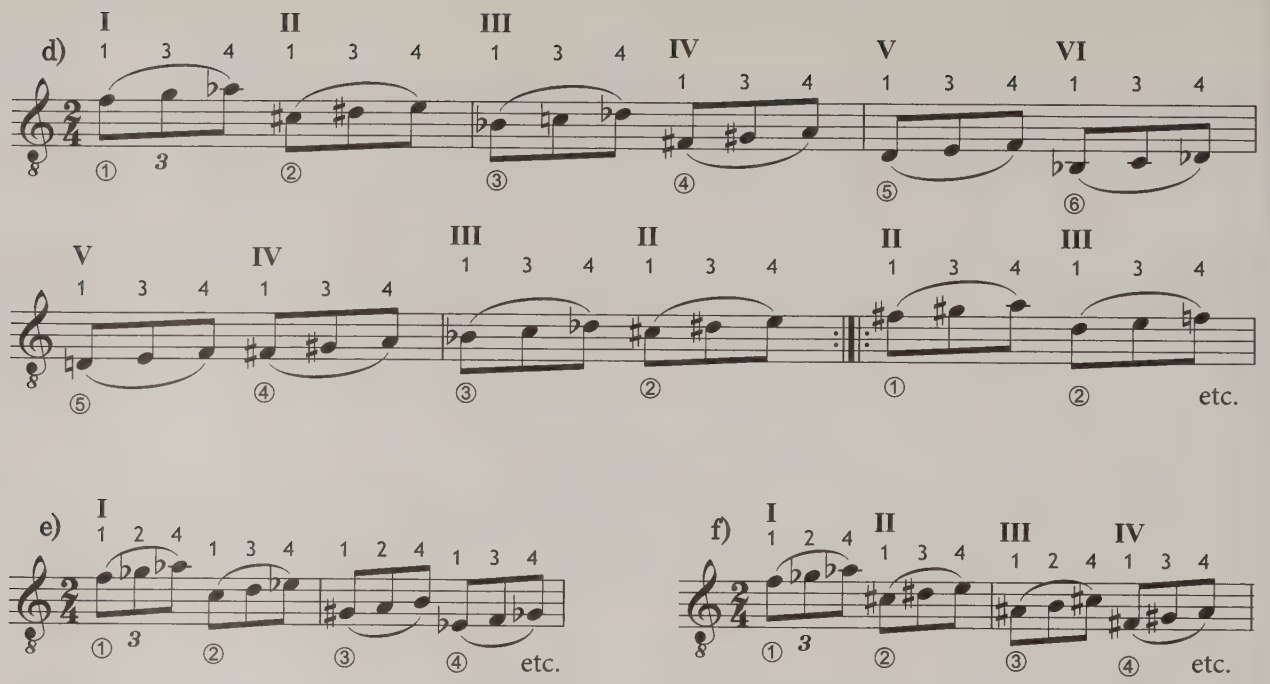
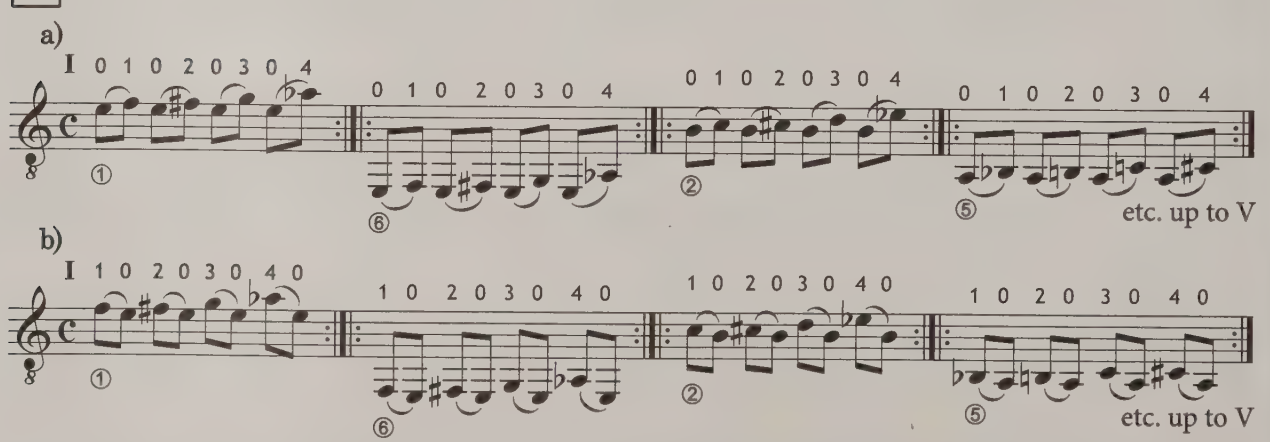


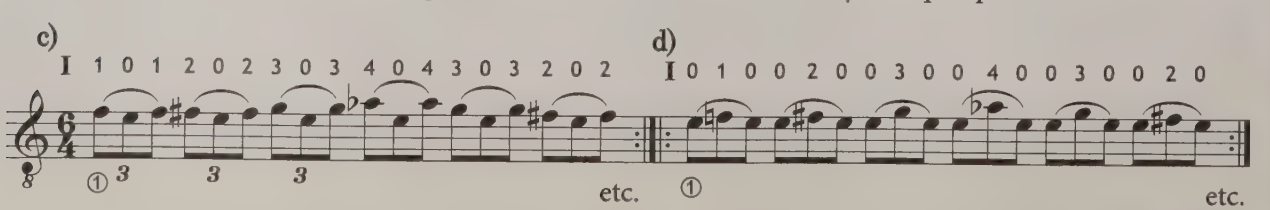
Ascending and Descending Slurs with Open Strings

You will encounter LH slurs incorporating open strings throughout the entire guitar repertoire. When practicing them, you should be mindful of the following:

An **ascending slur** starting from an open string should be performed with lesser strength than normal. At the same time, the open string should not be plucked too loudly by the RH.

With the **descending slur** ending on an open string, you have to be careful how you use your strength because if you use too much, a loud, rattling tone will result. To place the finger on the next higher string (like a rest stroke) is only conditionally possible. To produce a smooth, full sounding descending slur, the fingers should slightly pull the string diagonally up and over the higher adjacent string. A slight twisting of the wrist can support this movement.

17

The following exercises are only depicted on the 1st string and in position I. They should however, as always, be practiced on strings ⑥, ② and ⑤ as well as successively, i.e. up to position V.



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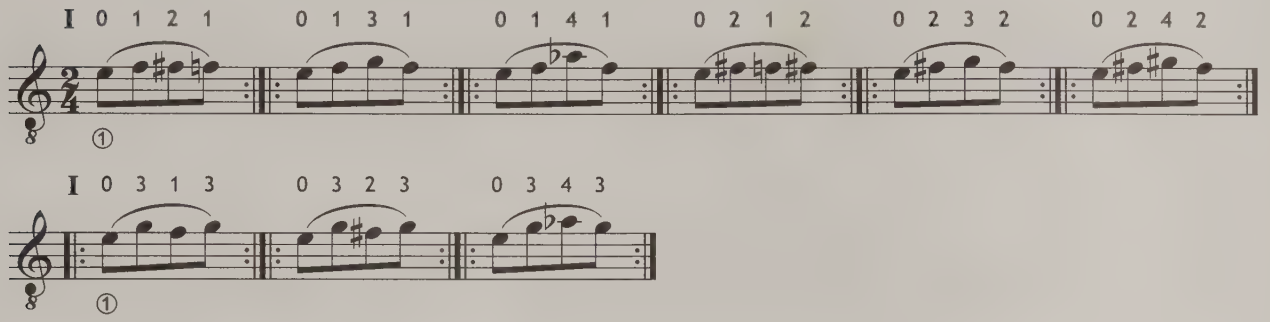
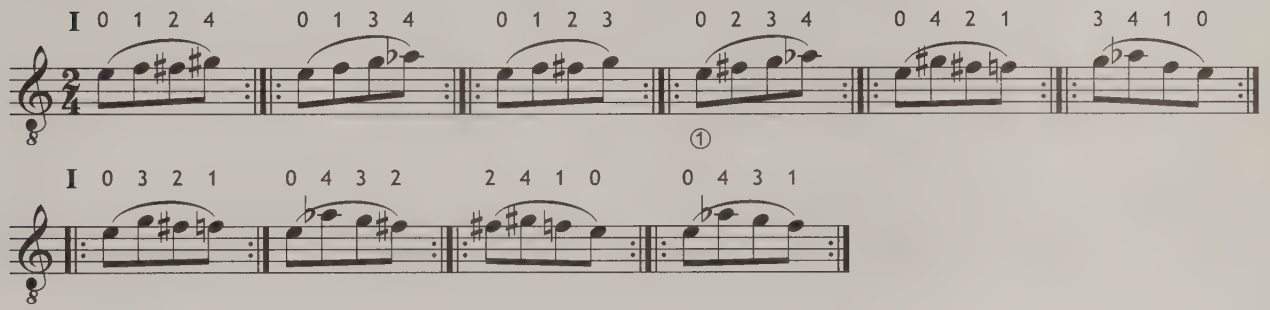
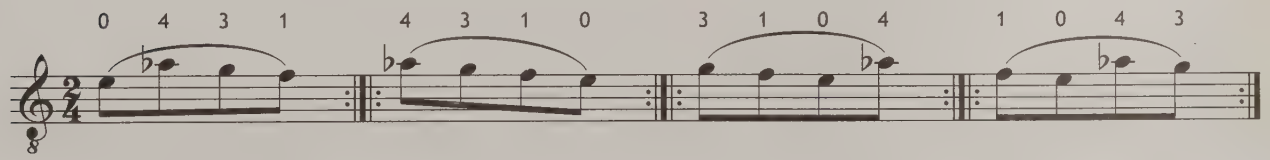
18

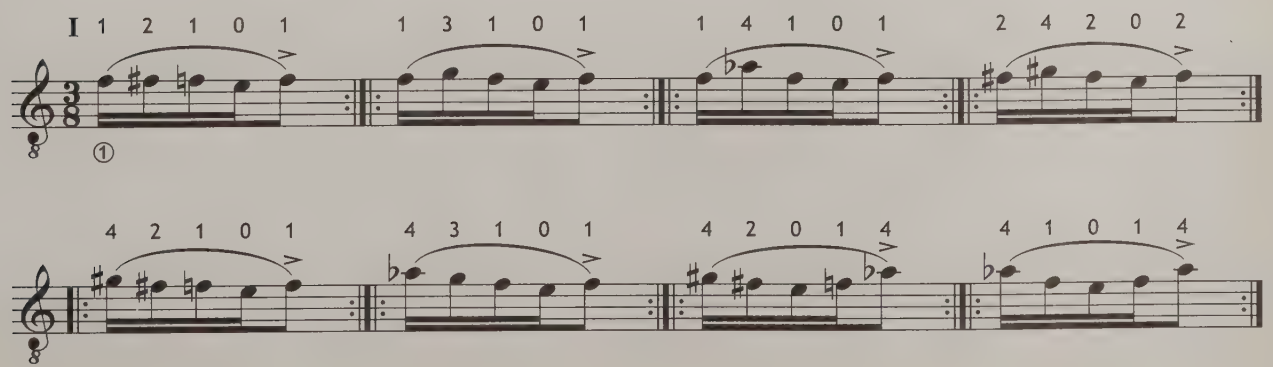
a) Slurs with Two Fingers and an Open String

The exercises are only depicted on the 1st string and in position I. They should however, as always, be practiced on strings ⑥, ② and ⑤ as well as successively, i.e. up to position V.



b) Slurs with Three Fingers and an Open String

In all the combinations in 18), you can start on any note in the exercise. Here, as an example, is the last combination in 18b):

19 Ascending and Descending Slurs as an Embellishment

Perform on all strings.



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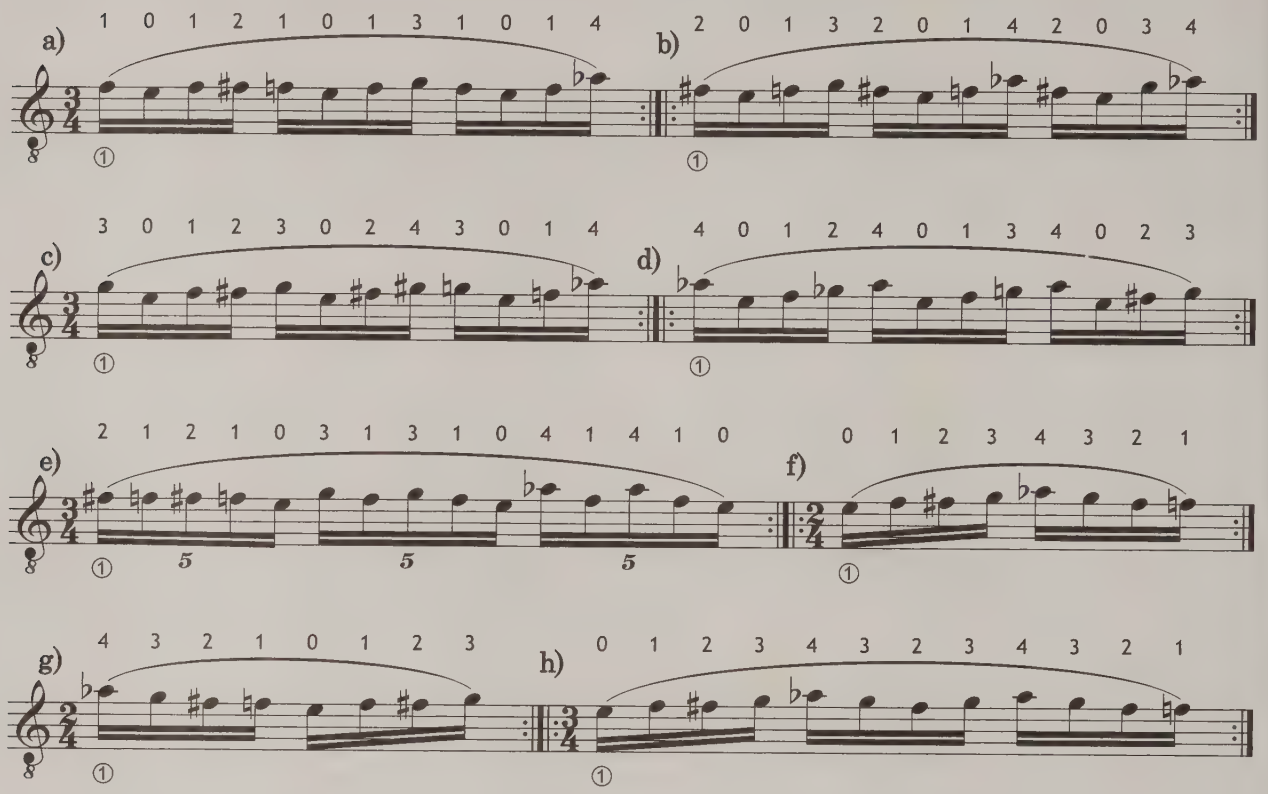
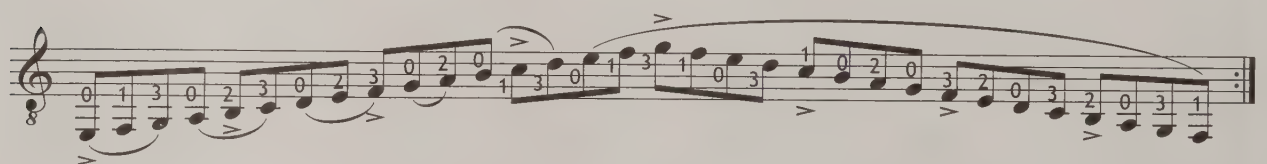
20 Short and Intensive Slur Exercises

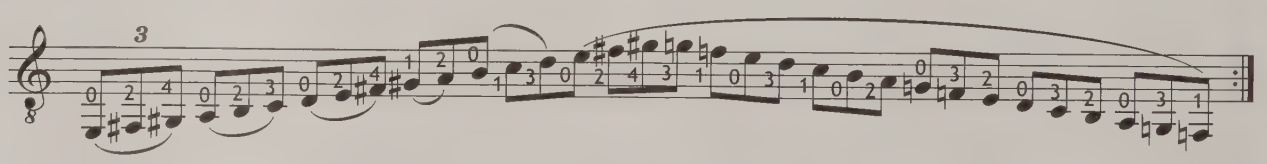
You can loop the following exercises infinitely which should be performed with only the LH and on all strings.

21 Scales with Slurs

Scales with slurs – here in typical guitar keys and in position I – often find use in the guitar repertoire. Starting with the 1st string, they are played descending using only the LH.

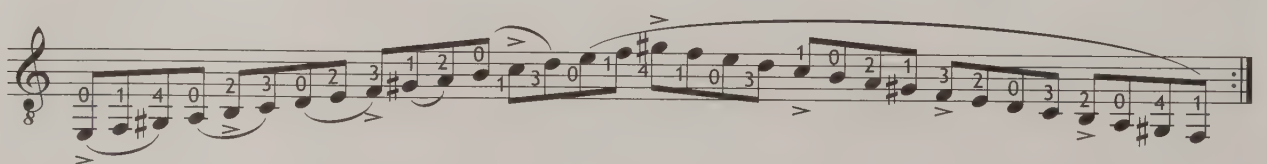
C Major



A Melodic Minor



A Harmonic Minor



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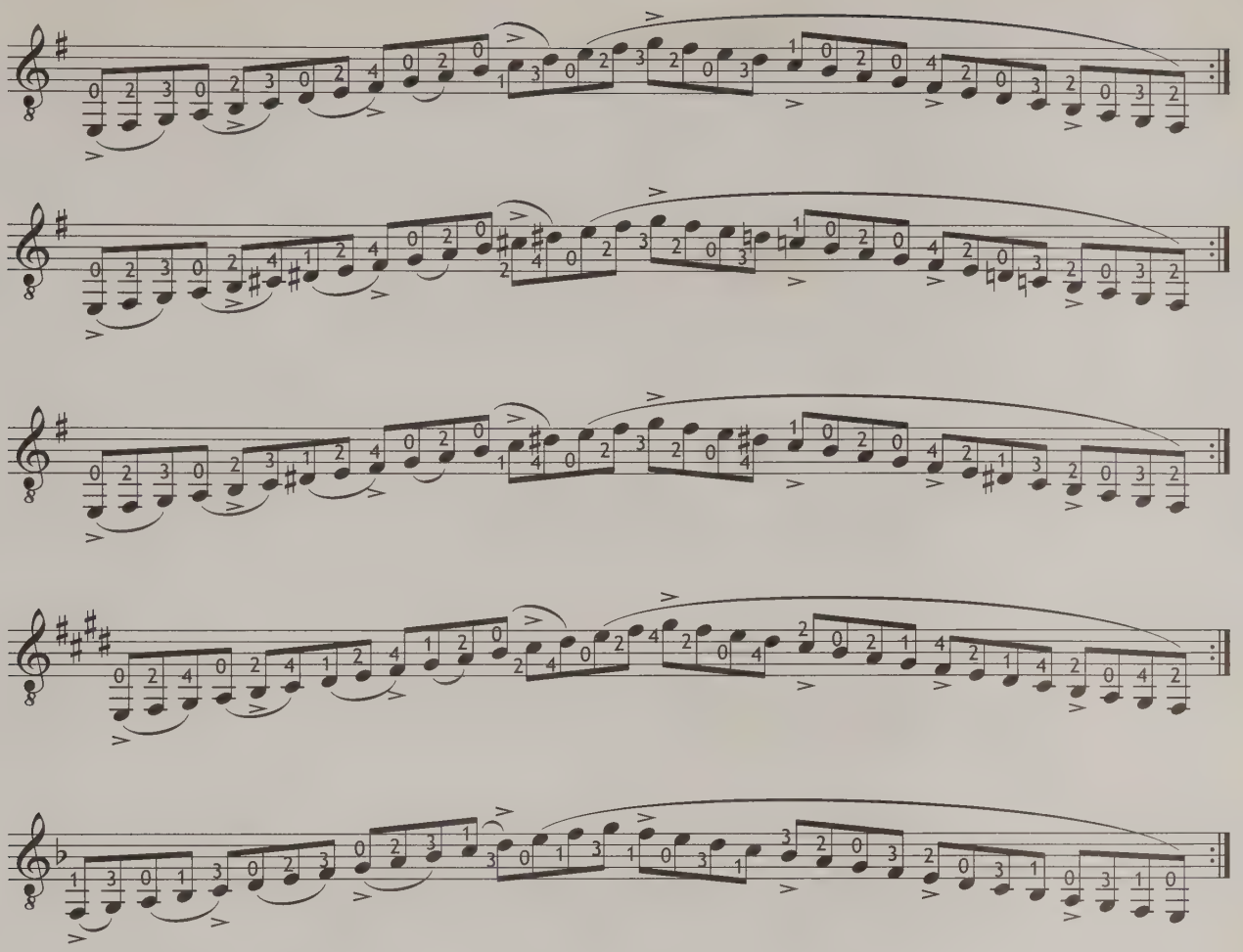
G Major

E Melodic Minor

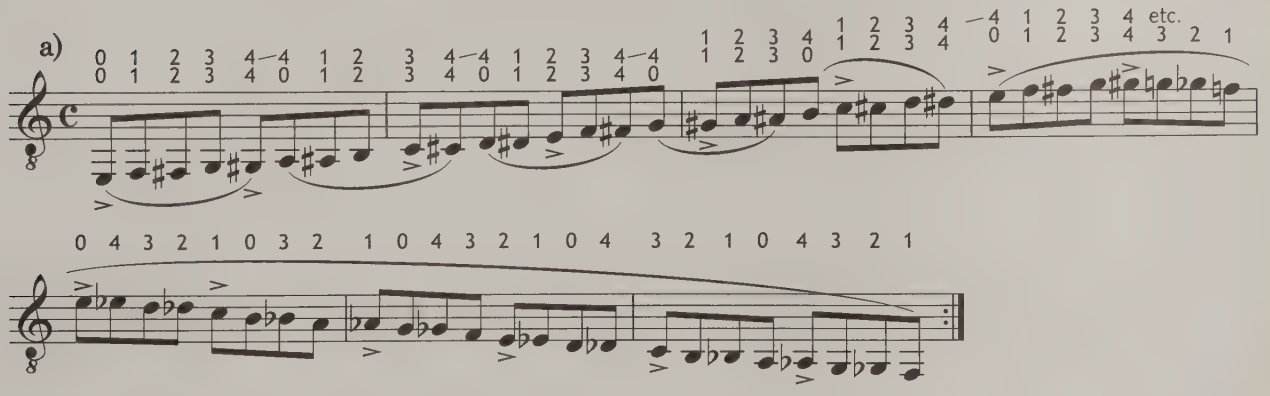
E Harmonic Minor

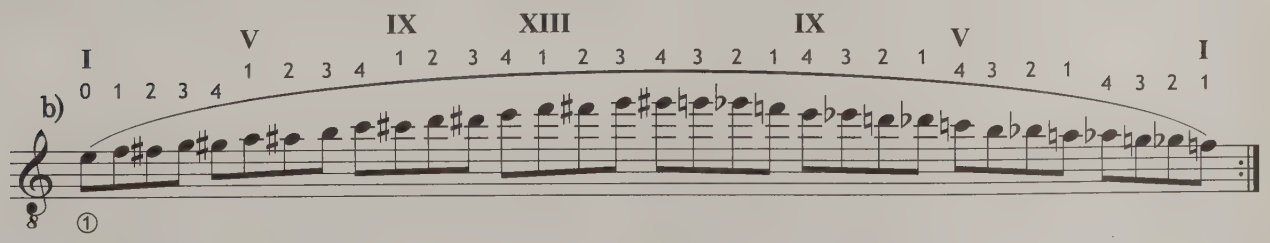
E Major

F Major



22 Chromatic Scales with Slurs

The top fingerings of this ascending scale are to be played only with the LH alone.

On a single string (extended) with the LH only. Practice on the other strings as well.



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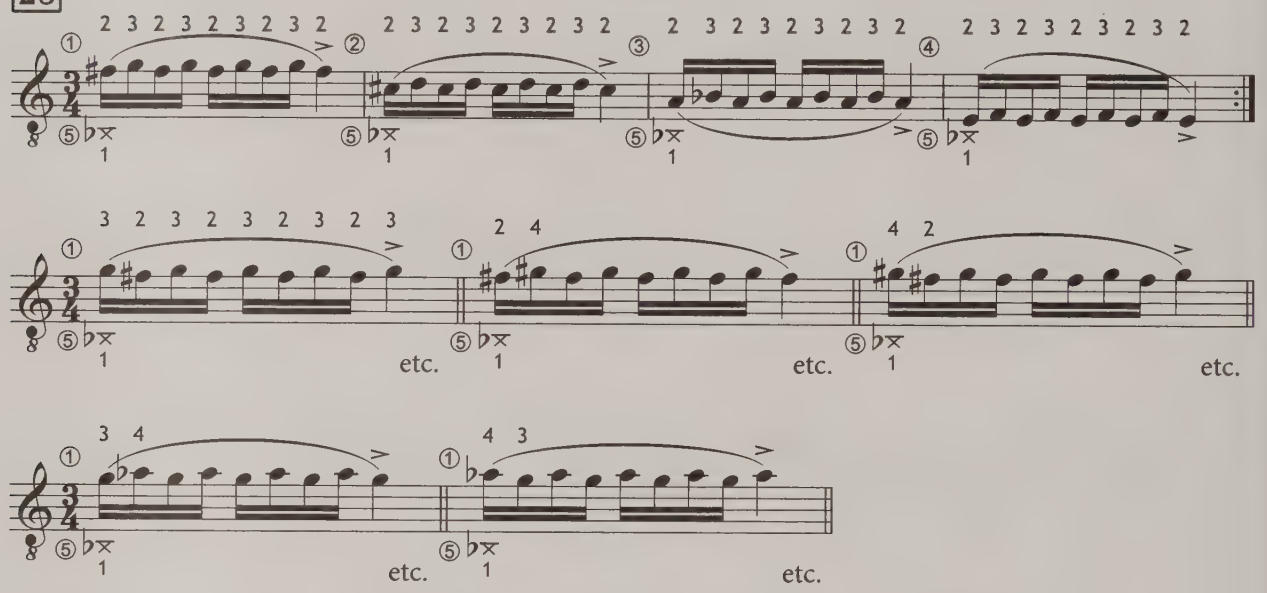
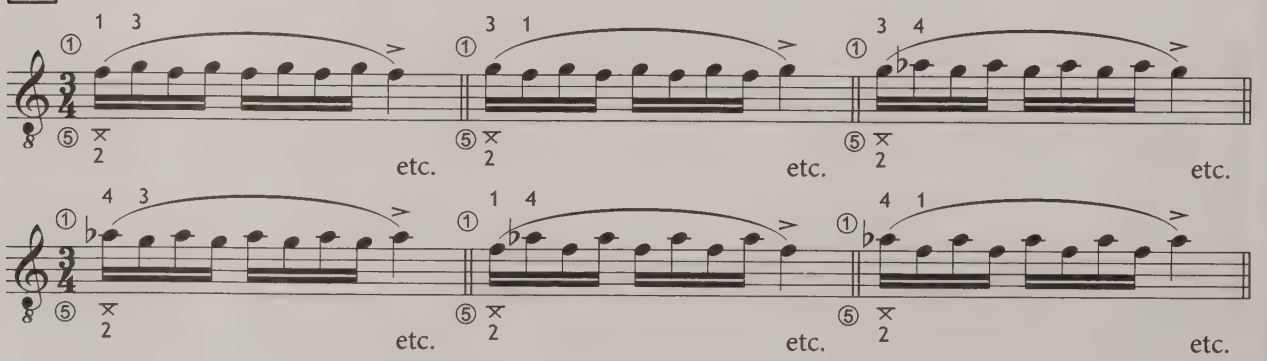
Slurs with Fixed Fingers

Ascending and descending slurs with fixed fingers are a major challenge. Here most commonly one finger remains in the same position on a previously determined string, here the A string. The remaining three fingers can now carry out the exercises on the 1st to the 4th strings. If the fixed finger is on the 1st or 2nd string, the finger combinations can be performed from the 2nd (3rd) to the 5th (6th) string.

The exercises should be worked on carefully and with a correspondingly relaxed approach, otherwise your muscles and tendons might suffer injury.

23

TIP

To ensure the longest practicing time possible, the exercises incorporating fixed fingers should be accompanied by and alternated with chromatic slur exercises such as a chromatic scale, for example. That way your fingers can relax, especially when the chromatic slurs are not too forcefully performed: 3 minutes with fixed fingers, 1 to 2 minutes chromatic slurs.

24 Perform as in Exercise 23:

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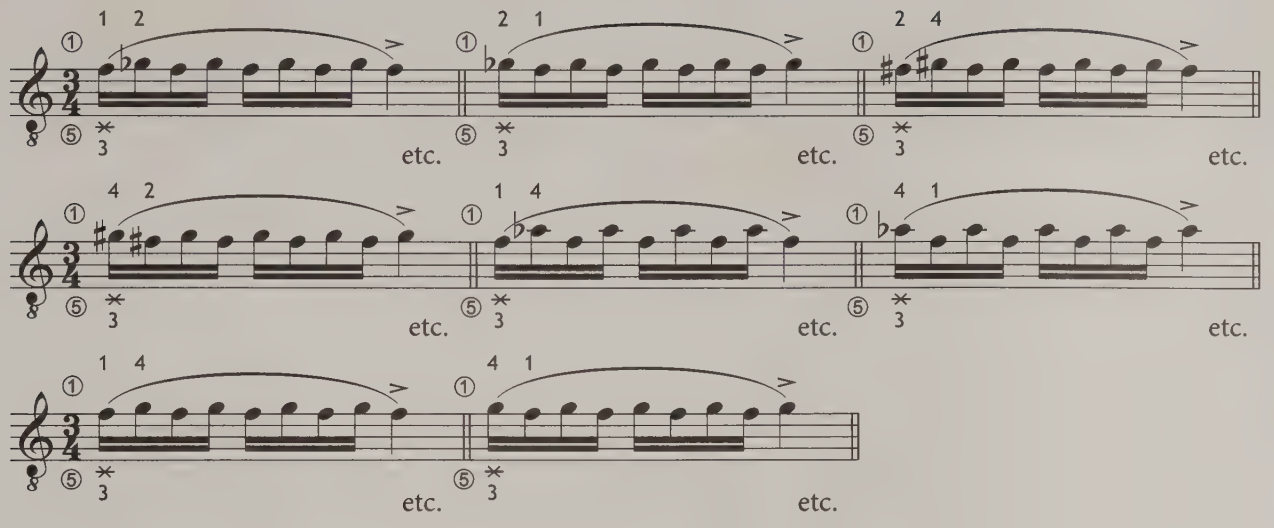
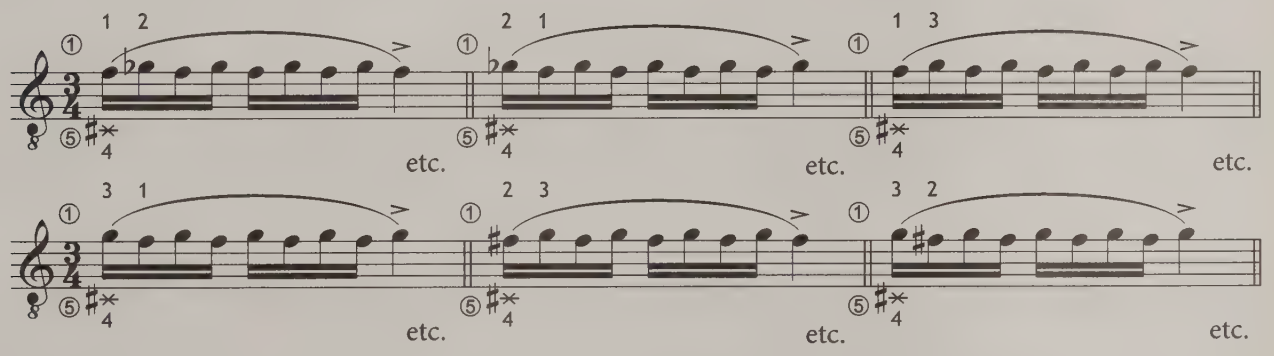
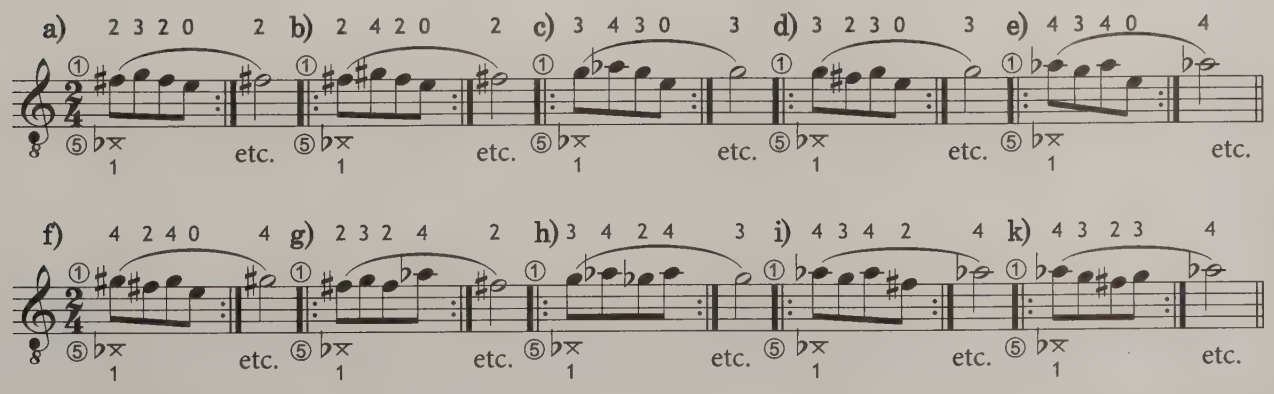
25 Perform as in Exercise 23:

26 Perform as in Exercise 23:

Slurs with Fixed Fingers / With and Without Open Strings

When selecting from the many possibilities which arise from, for example, combinations of two and three fingers and an open string, here the focus is on the training and independence of the 3rd and 4th fingers of the LH.

27 **The 1st finger is fixed on the A string.**
Perform as in Exercise 23:



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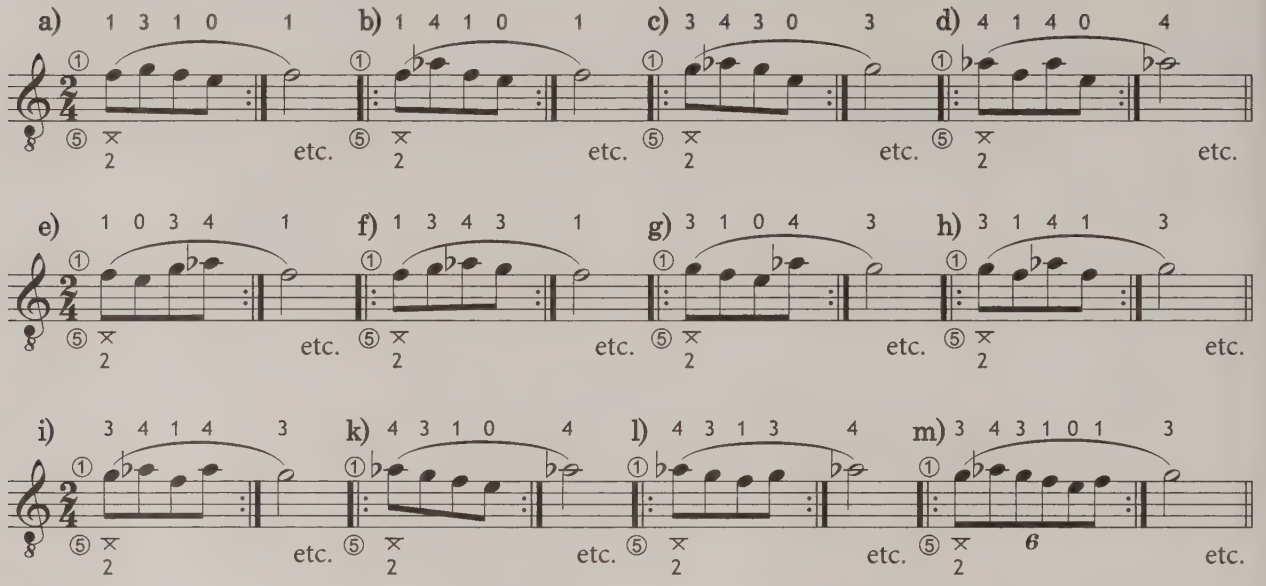
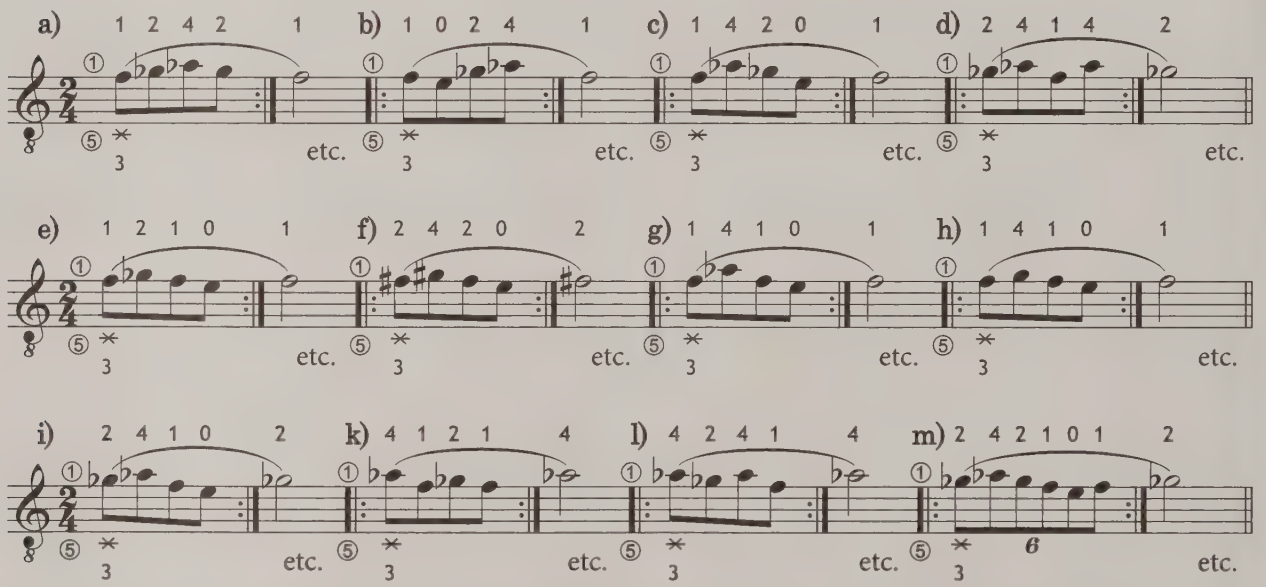
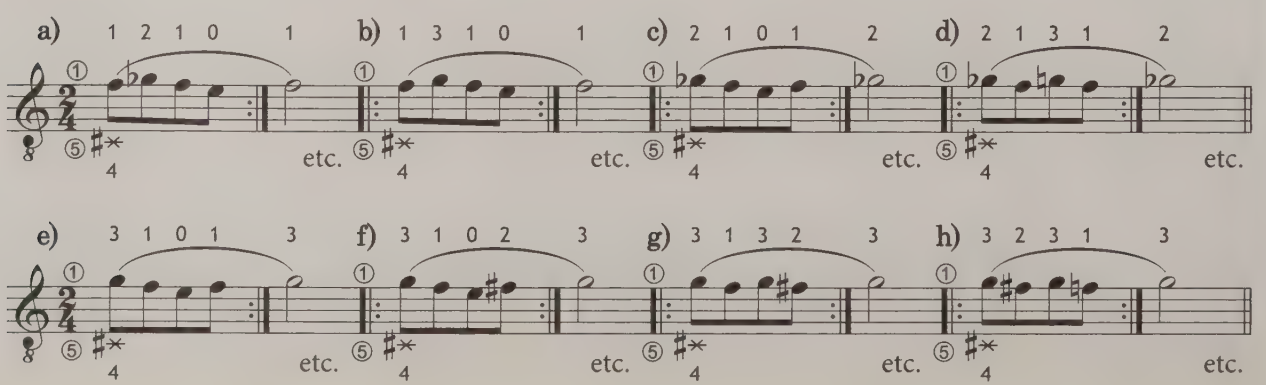
28 **The 2nd finger is fixed on the A string.**
Perform as in Exercise 23:

29 **The 3rd finger is fixed on the A string.**
Perform as in Exercise 23:

30 **The 4th finger is fixed on the A string.**
Perform as in Exercise 23:

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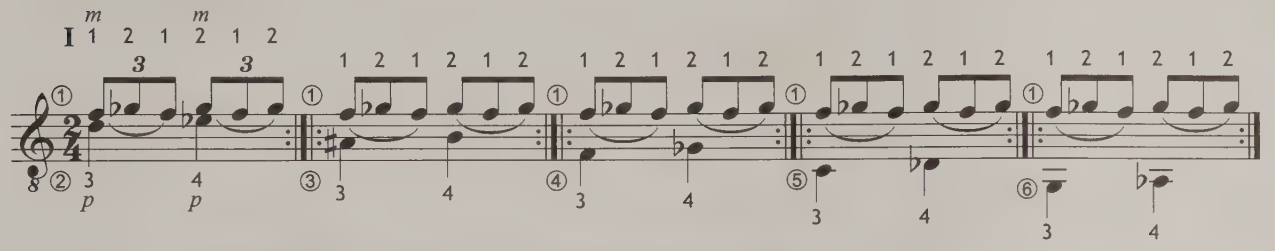
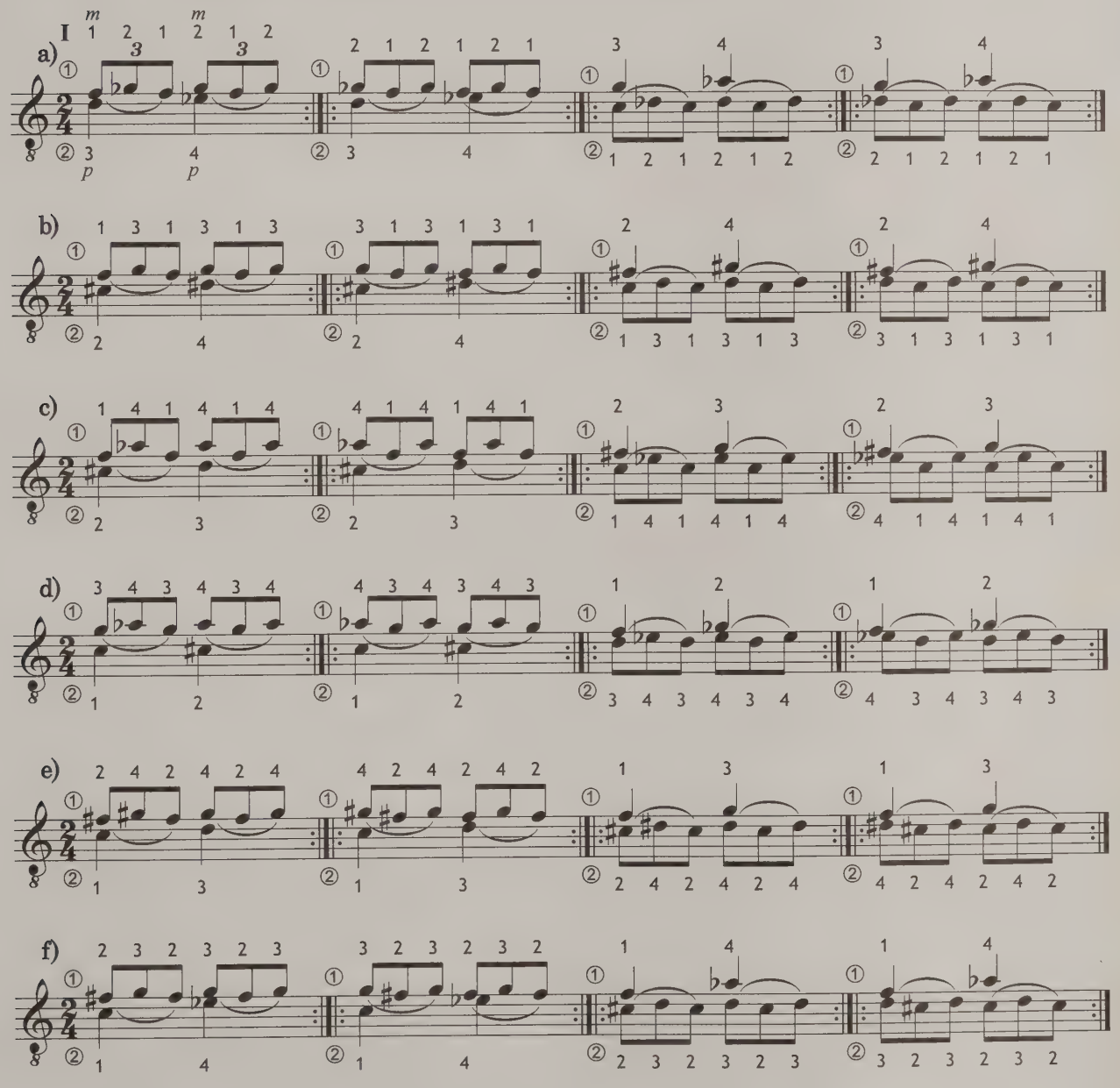
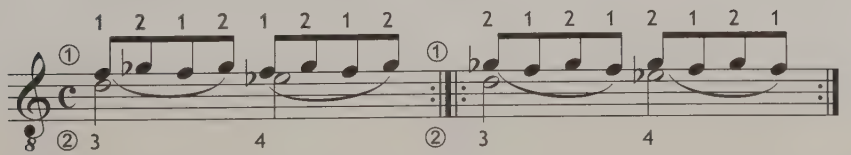
TIP 31 Two Note Slurs with Triplets and a Second Part

These two-part exercises are especially effective as the fingers playing the second part remain in place longer (a quarter note) and are, as a consequence, fixed. Practice on ①-②, ①-③, ①-④ and ①-⑤. Guitarists with large hands can also attempt ①-⑥. Here is the first combination of Exercise 31a) as a performance example:

Perform the following exercises as set out above and in different positions.



Variation with even, slurred eighth notes:

etc.

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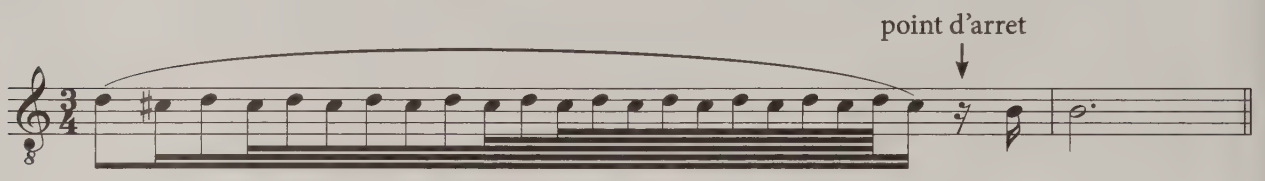
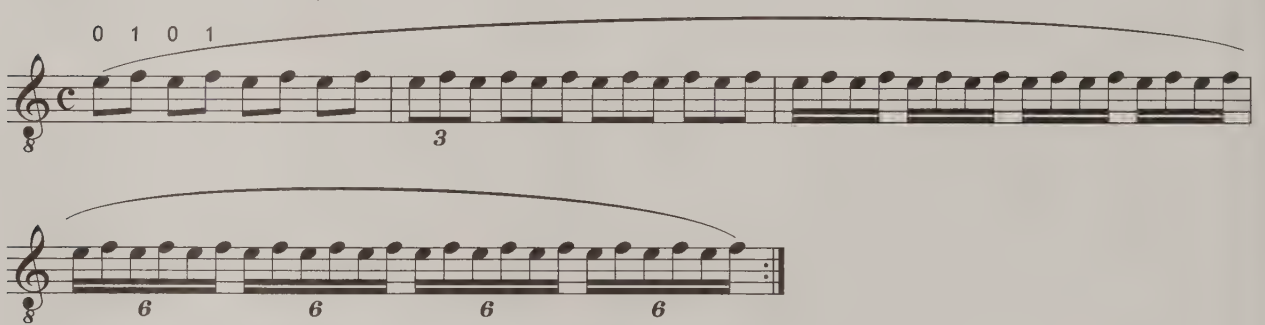
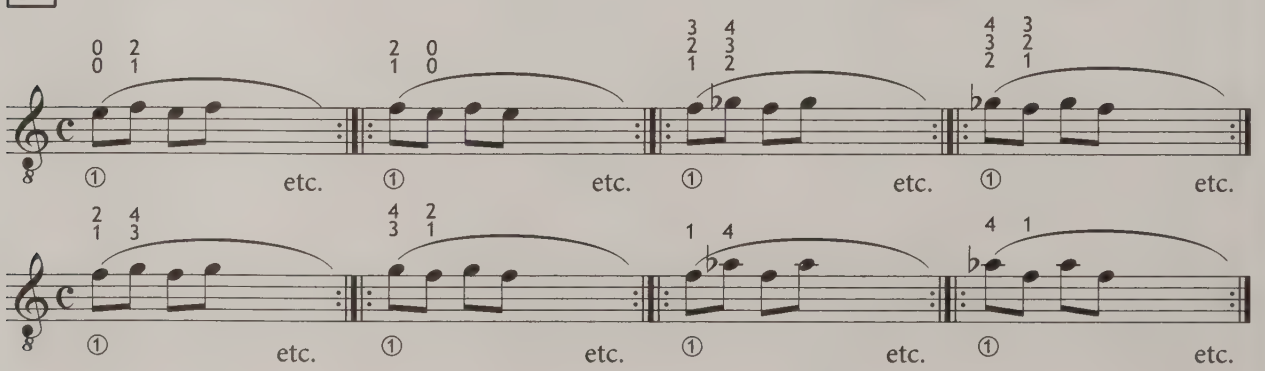
LH Trill Exercises and Embellishments

The most commonly played trills and embellishments for guitarists come to us from the Baroque period. The following applies stylistically to this trill: start with the note above the main note, begin slowly, then increase the speed somewhat, pause before the end ("point d'arret") and then conclude with a rapid ending. This rhythmical flexibility demands technically well-trained LH fingers. This especially applies to the 4th finger.

Illustration of a baroque trill:

The best preparatory exercises for trills are two note slurs (ascending and descending) as well as four note groups and triplets (see Exercises 3–5 on page 138 in this chapter). What follows are exercises for only the most important embellishments.

Rhythmic Exercise for the LH Trill

Performance example:

32 Perform the following exercises on all strings and successively up to the upper positions.



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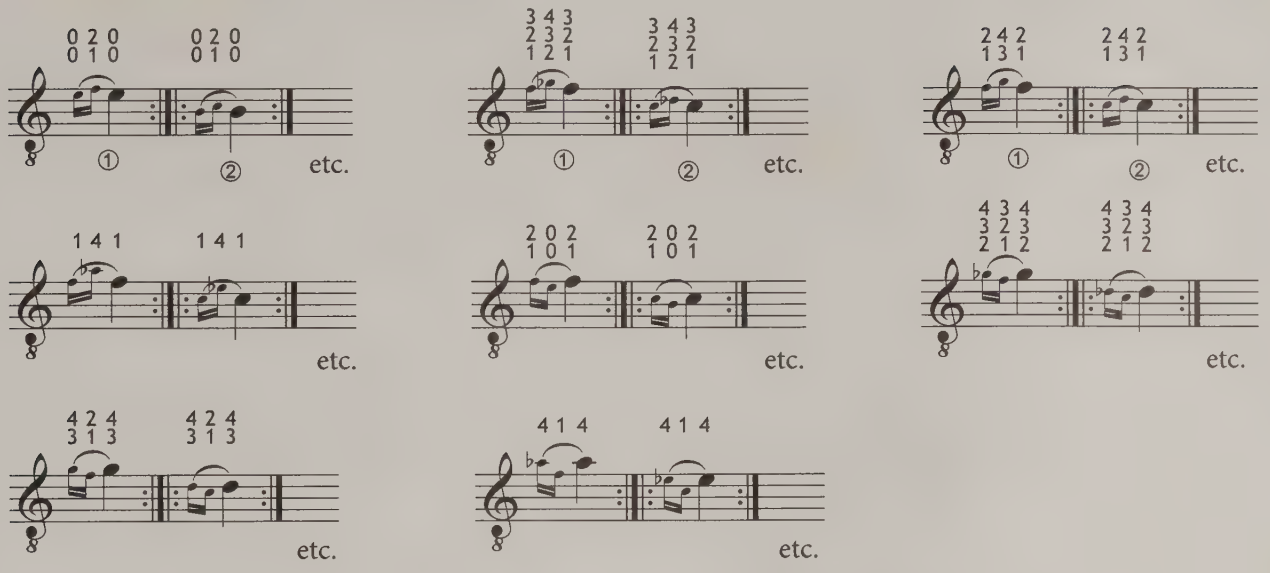
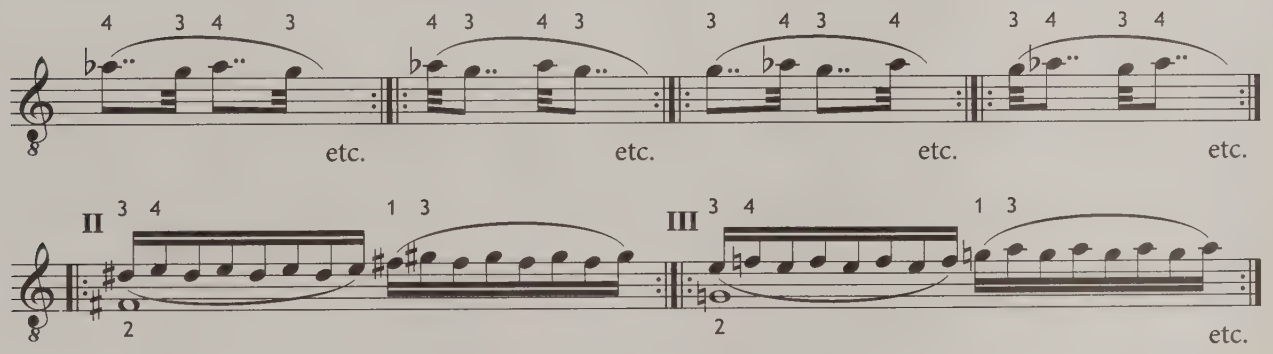
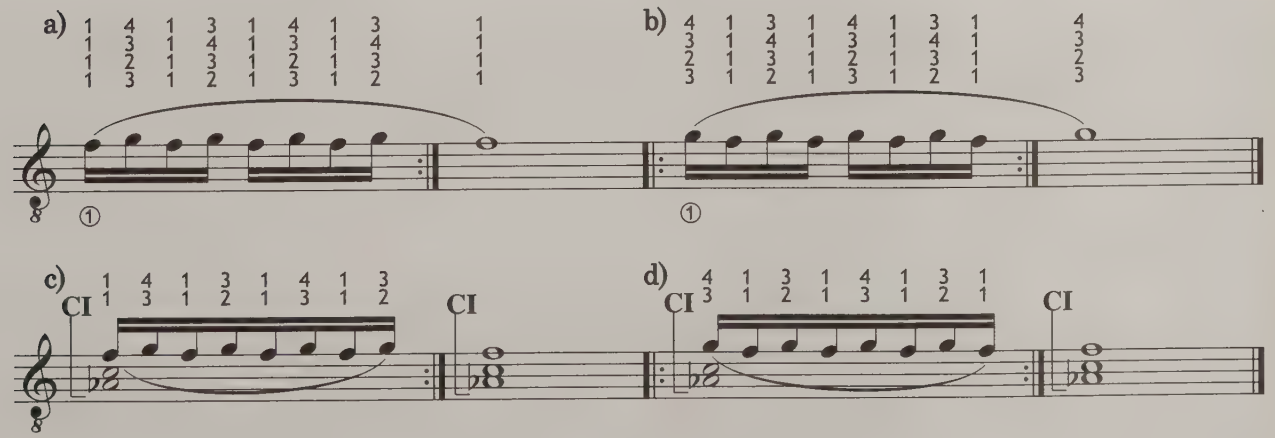
33 Exercises for Upper and Lower Mordents

Perform on all strings and successively in other positions.



34 Trill Exercises for the 4th Finger

35 Whole Tone Trill With and Without Barre

Perform in other positions as well.

Further exercises for embellishments (double appoggiatura, slight):
Exercises 14 (p. 148, 18 and 19 (p. 151).

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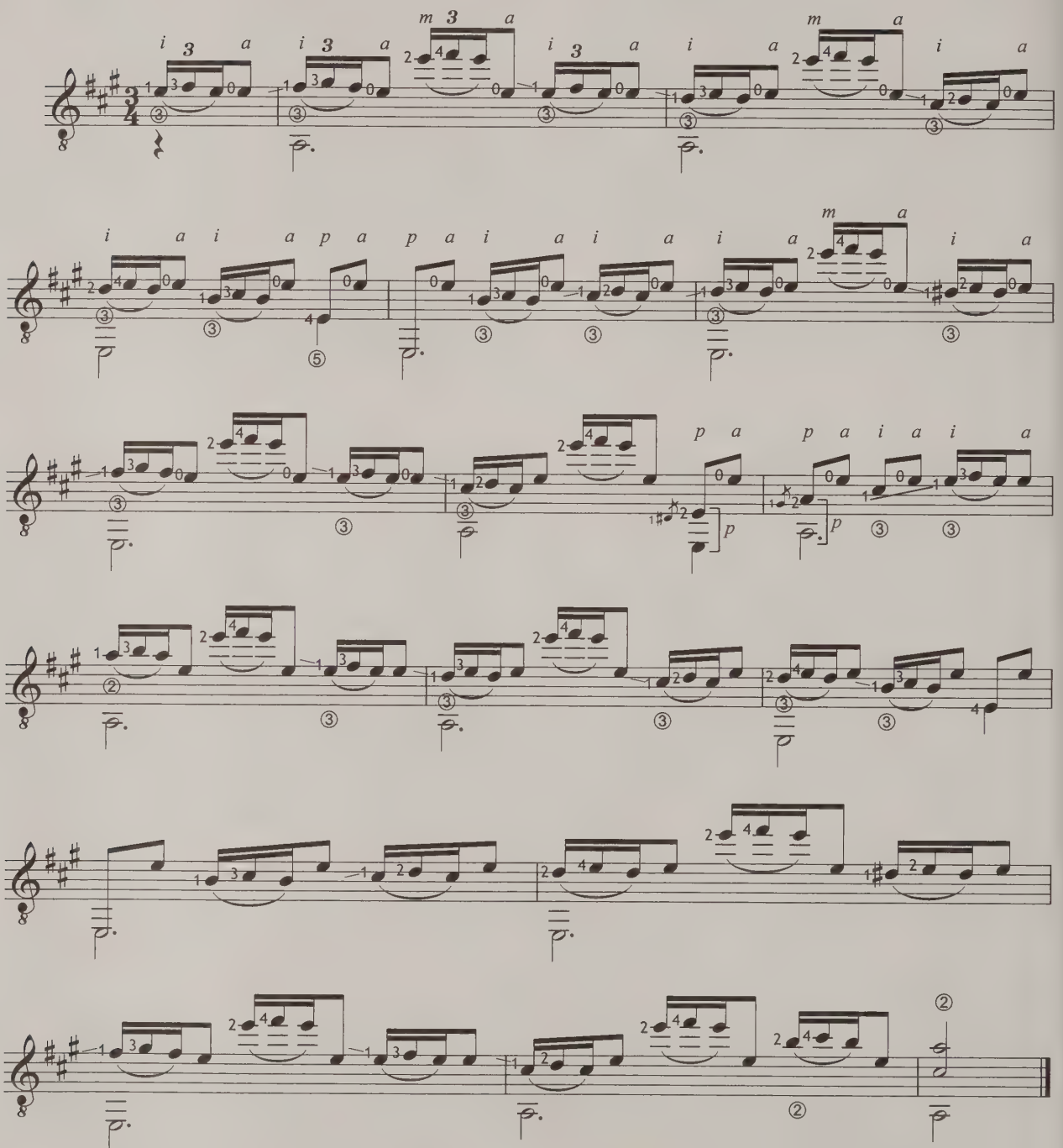
36 Slur Exercise Taken from the Guitar Repertoire
Tárrega, Variations on Paganini's "Carnival of Venice"

Francisco Tárrega
(1852–1909)



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V. Tremolo

The tremolo, with its rapid repetitions primarily on the treble strings (with Regondi also on the 4th string), is one of the greatest challenges in mastering guitar technique. It is completely idiosyncratic to the guitar and in this form, cannot be found in the technical requirements of any other instrument. The note repetitions are played with **a-m-i** and should simulate a note sustained for a long time. The bass, played with the thumb, not only provides a harmonic framework but often functions as a polyphonic second part as well.

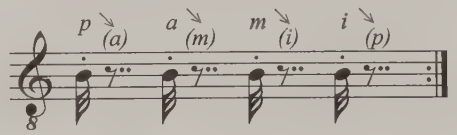
To be able to convincingly uphold the illusion of a note that is sustained for a long time, you have to pay close attention to the following important practicing goals:

1. All notes have to be played absolutely even **rhythmically**.
2. The notes played by **a-m-i** have to be performed at exactly the **same volume**. No finger can "stick out" dynamically due to an undesired accent.
3. The thumb (**p**) and the fingers (**a-m-i**) have to be **dynamically balanced**. The melody and bass have to be able to play pianissimo and fortissimo independent of each other.

All tremolo exercises, which, save for a few exceptions, are based on the pattern **p-a-m-i**, are, at the same time, arpeggio exercises (see "Supplementary Exercises," p. 168).

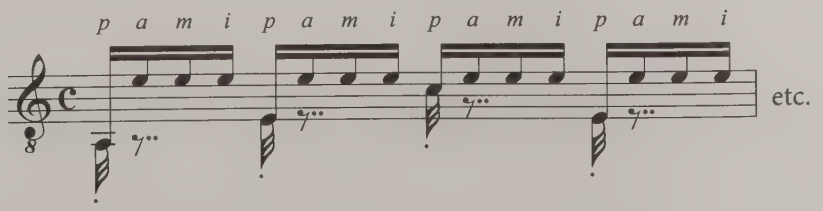
Tremolo exercises are the ideal complement to arpeggio exercises.

General Practicing Methods

1. A helpful method is extremely short **staccato playing** on a single string. Here **p-i-m-a** play on, for example, the 2nd string in succession as follows:
   The note played by **p** is muted by **a** immediately after the attack, the note played by **a** is similarly muted by **m**, **m** by **i** and then the note played by **i** is finally muted by the thumb (see "Staccato Reflex Development," p. 51).

2. Tremolo exercises on a single string are to be preferred if you don't have that much time to practice. They should be predominantly practiced on the 2nd string.

3. Only the thumb (bass) plays staccato. You can keep the back of your hand still this way. After attacking, the thumb immediately returns to the string it just played. This applies to every piece that contains a tremolo.

Only the thumb plays staccato:



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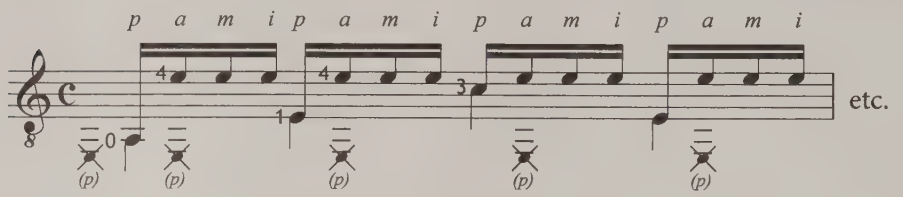
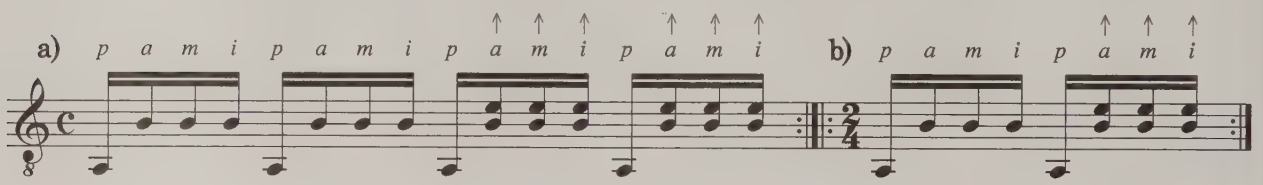
4. The thumb is placed on the 6th string and leaves it only to play other strings. After each attack, it immediately returns back to the 6th string.

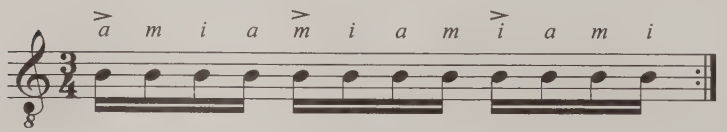
When it plays the 6th string, the result is – and only on the 6th string – a staccato effect.

5. The thumb attacks as usual, the fingers however use the outer side of the nail in **rasgueado** fashion. Alternating this approach with a normal tremolo attack is especially effective.

Preparatory Exercise with a-m-i

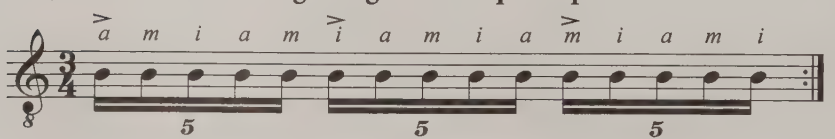
The finger combination **a-m-i** is the most natural and therefore the fastest stroke sequence. Tapping your fingers on a table, the combination **a-m-i** is easier to perform than **i-m-a**.

The pattern a-m-i is the main component of the tremolo.

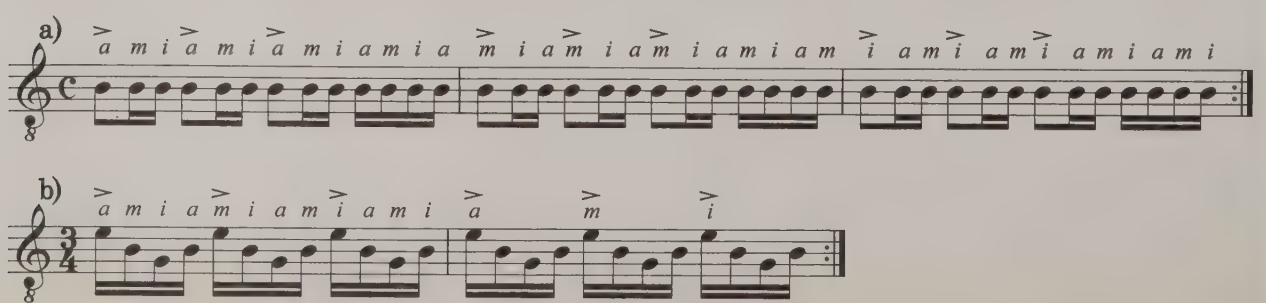
You can find basic exercises in the chapters "II. Coordination of the Left and Right Hands" (see p. 90) and "Scales in Triplets with Three Finger Alternating Patterns a-m-i and p-m-i" (see p. 131).

1

a) **On the 2nd string using a-m-i in four note groups:**

b) **On the 2nd string using a-m-i in quintuplets:**



2 **Using a-m-i with different rhythms on a single string and on several strings:**



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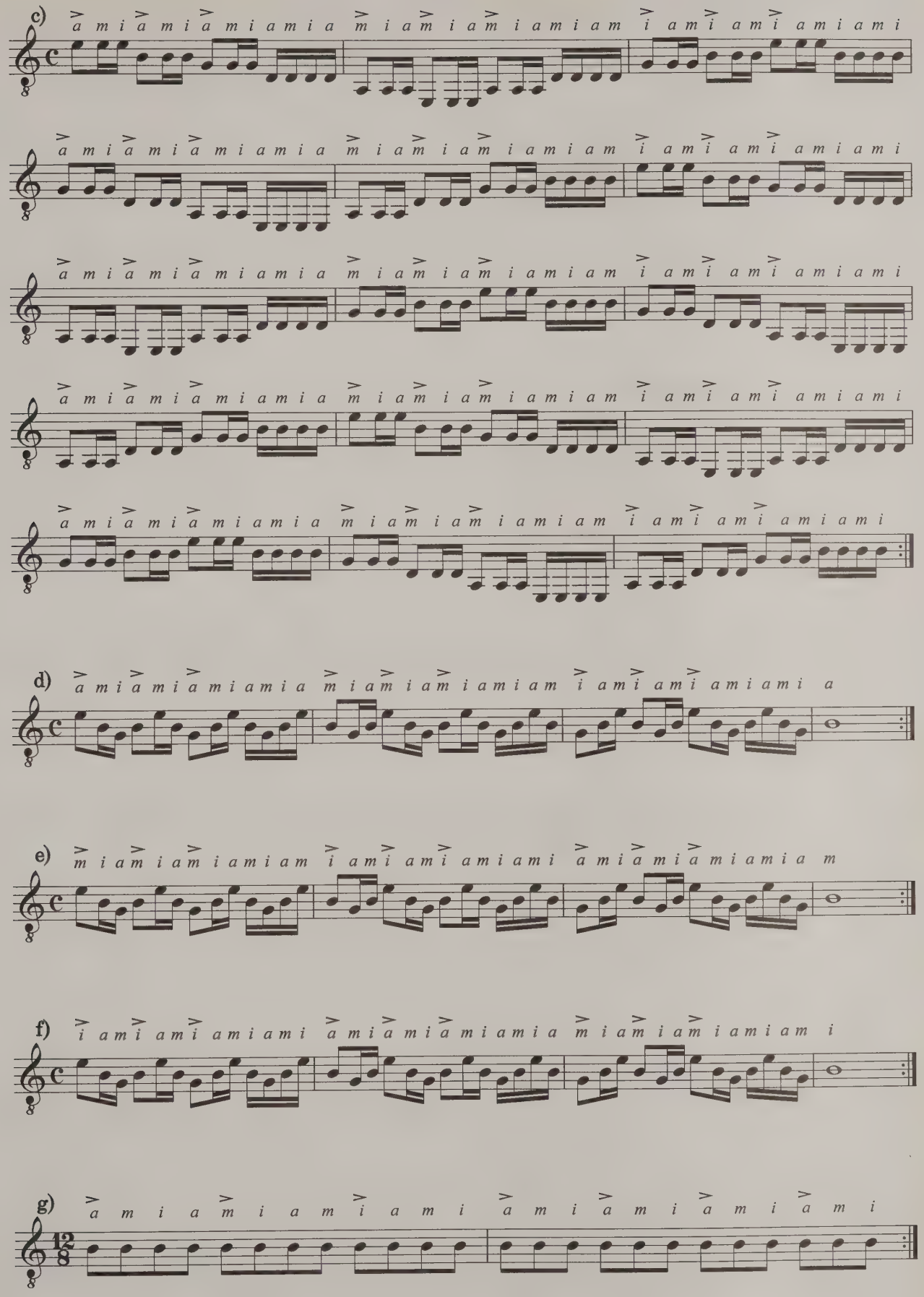
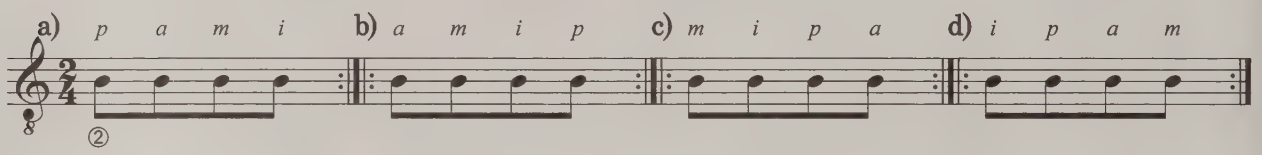
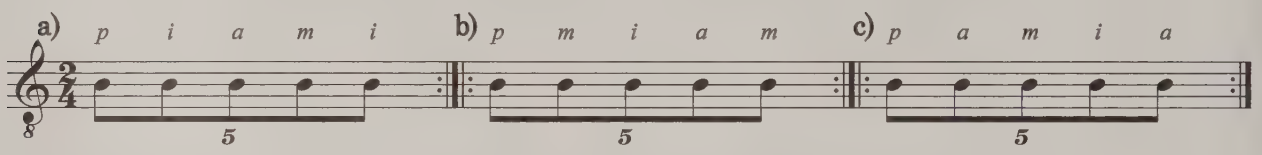
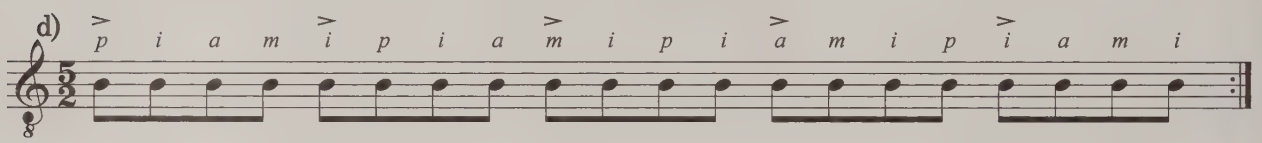

c)
a m i a m i a m i

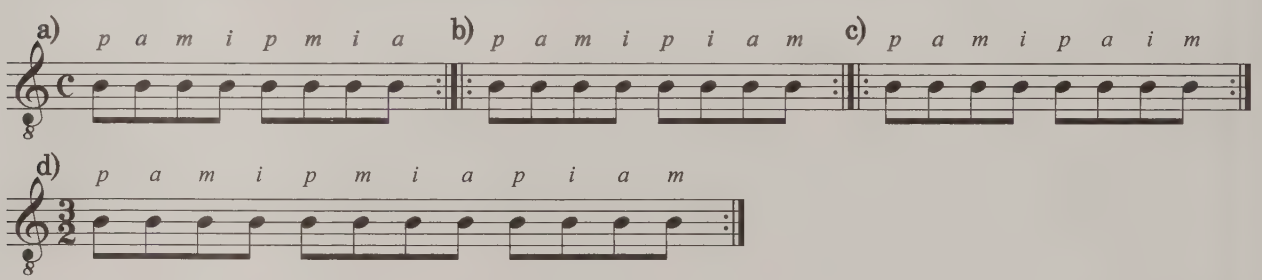
Tremolo Exercises on One String

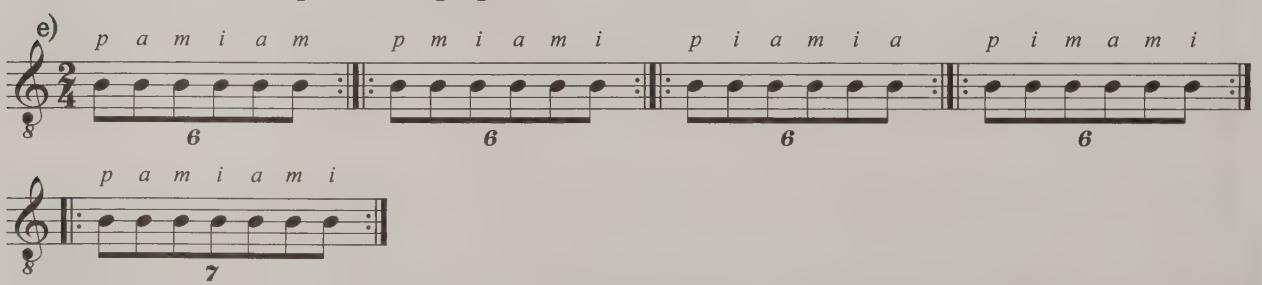
With all tremolo exercises on a single string, you can start with any finger in the sequence of the RH pattern. This is extremely important for the equal training of the fingers.

Practice all the following exercises on the 2nd and 3rd strings up to the uppermost positions.

3 **The classic four note tremolo:**

4 **The quintuplet tremolo (also known as the "flamenco tremolo") with variations:**

The "flamenco tremolo" divided into four note groups:



5 **Four note tremolo combined with other fingering patterns:**

Tremolo in sextuplets and septuplets:



TIP **The finger combinations 3a), 4a)–c) and 5e), when applied to two strings, are suited for any tremolo piece.**

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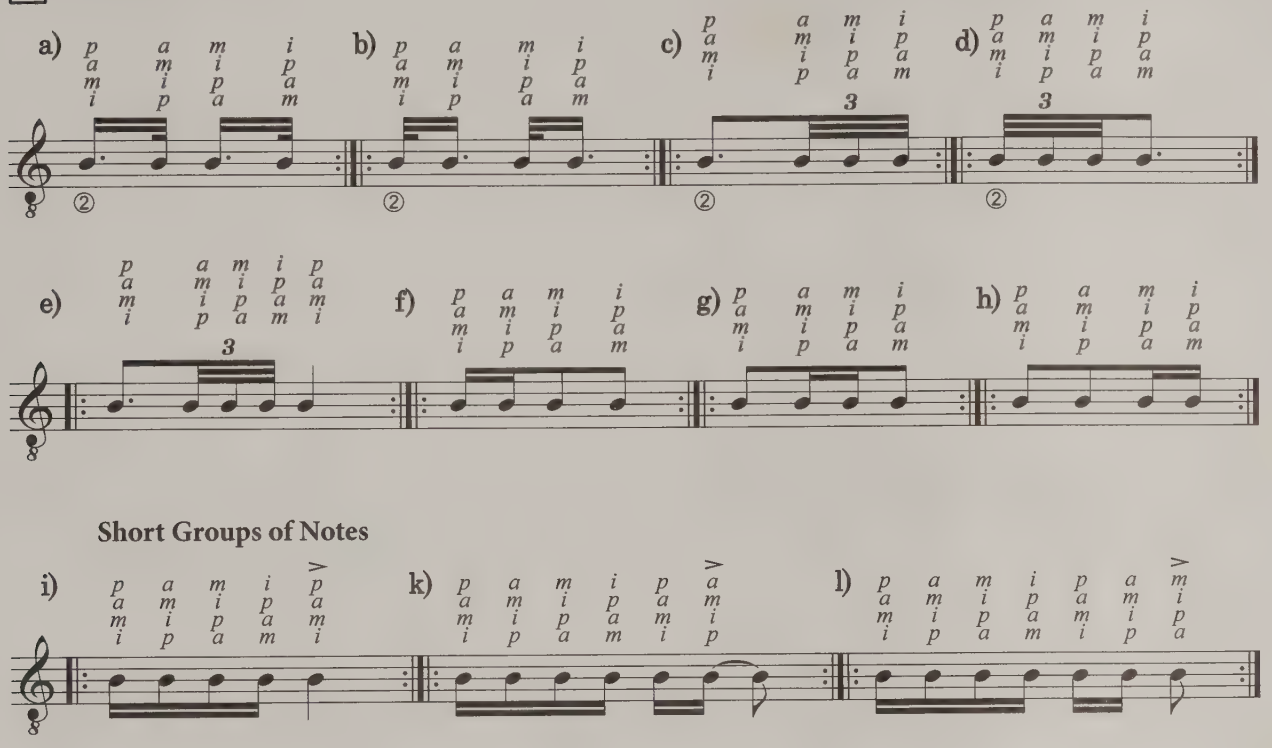
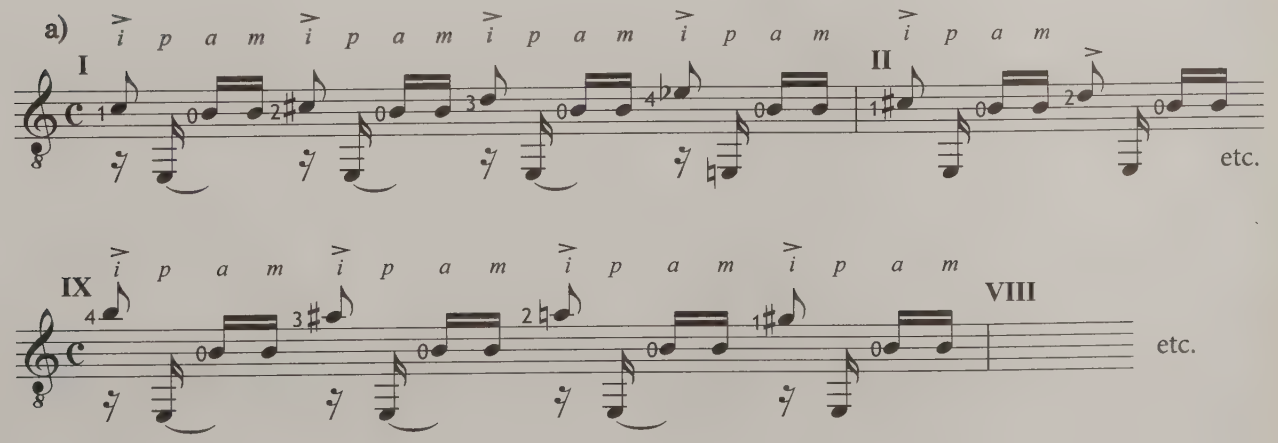
The Tremolo with Different Rhythms and in Short Groups of Notes

In order to train muscles of the fingers in a balanced way, practice with different rhythms as well as short groups of notes starting with each finger of the pattern.

6 **Rhythms**



Tremolo Exercises Coordinated with LH Exercises

7 The finger sequence **p-a-m-i** can easily get out of control. This often happens unnoticed. When you play too fast, your ear is no longer able to verify whether your tremolo is steady and even or not. The player, however, is satisfied with his seemingly "good" tremolo. When you now introduce the LH into the tremolo process, you get the tremolo back under control due to the necessary reduction of tempo. Practice on the 1st, 2nd and 3rd strings up to position IX and back.

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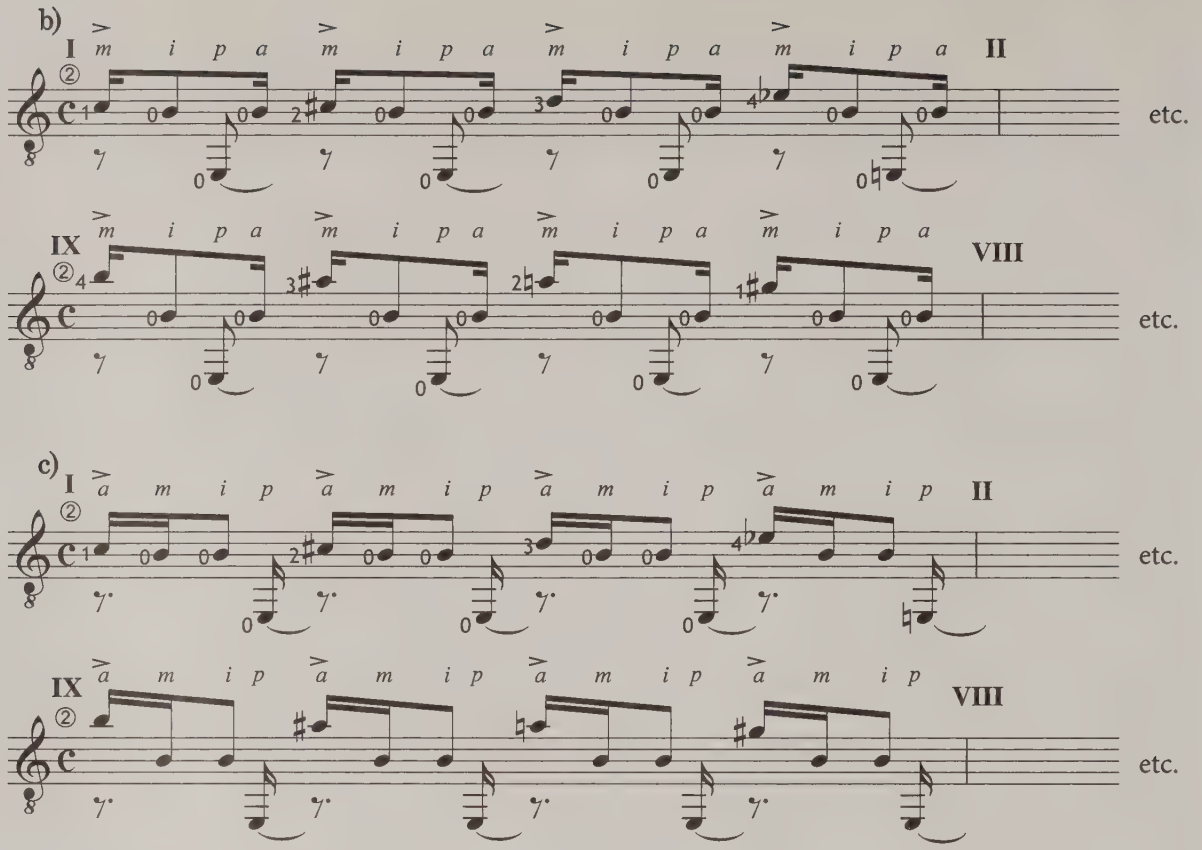
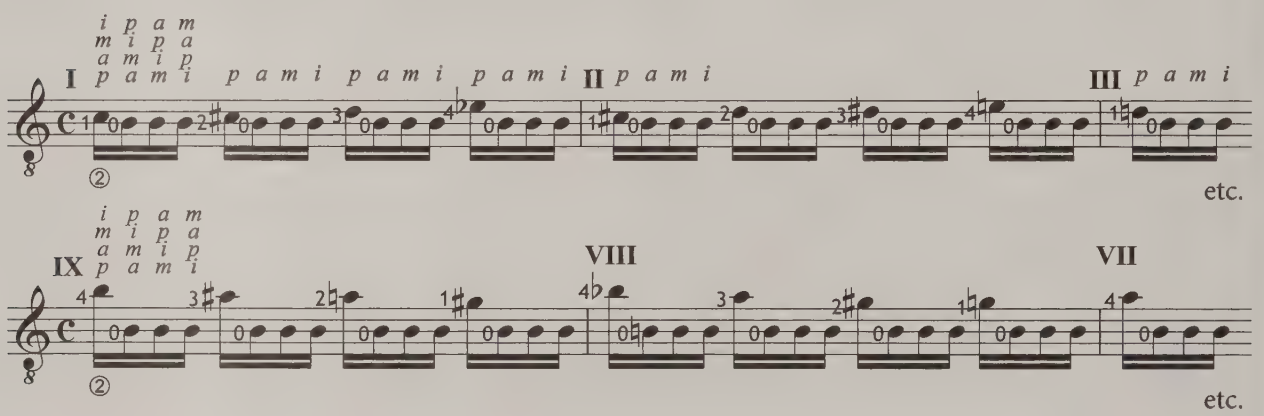
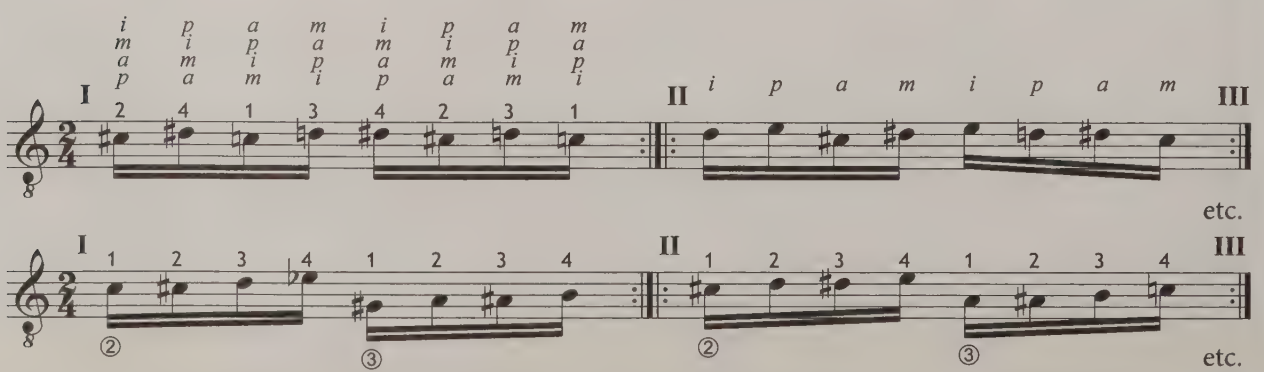

8 Exercise 7 displayed on one string:

9 Incorporating LH chromatic exercises (24 permutations) into your tremolo leads to difficult coordination exercises for the LH and RH (see Exercises 41 and 42, p. 108).

Example exercises:

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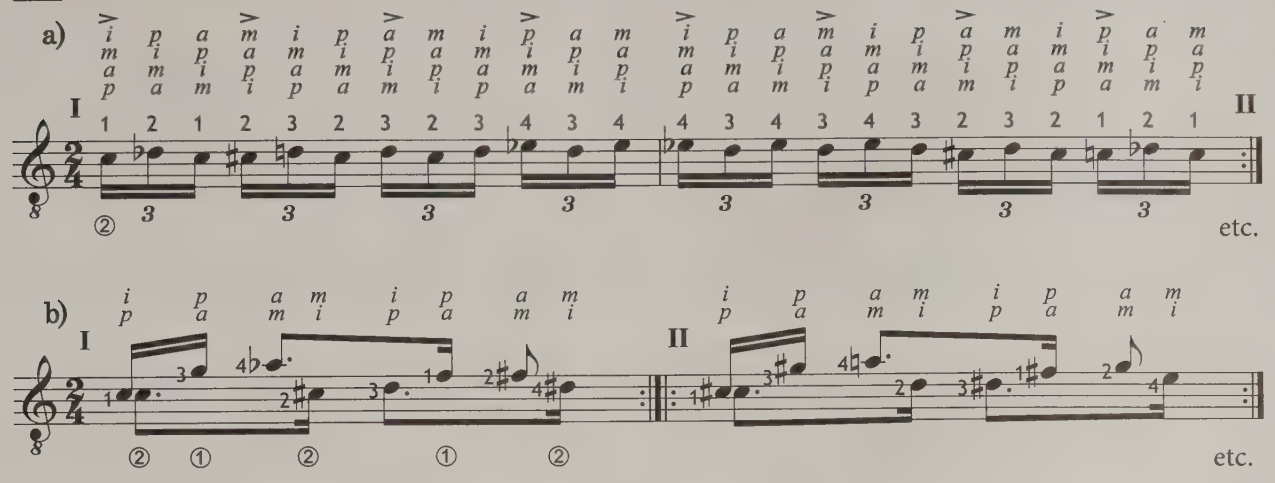
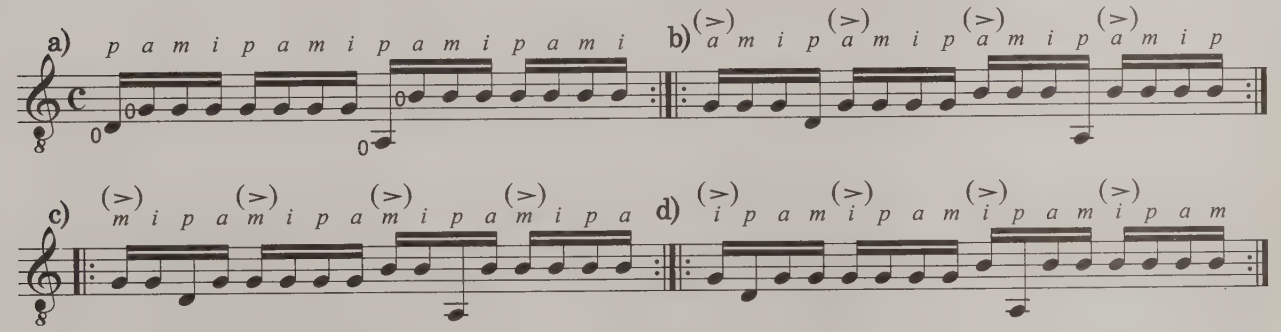
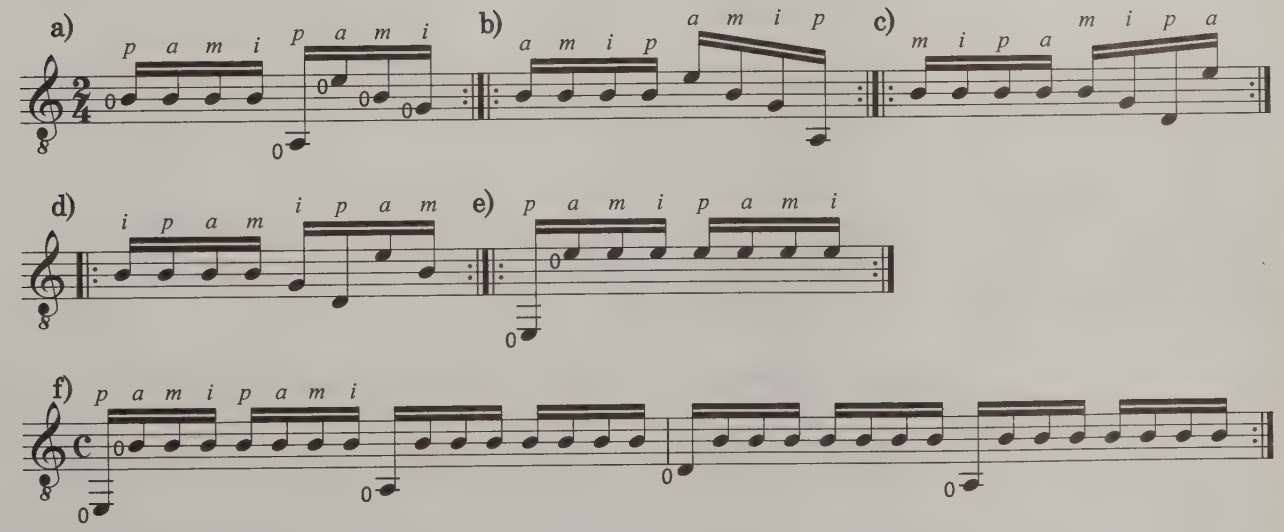


Tremolo Exercises on Various Strings

11 The accents placed in parentheses in Exercise 11 serve to remind us that a potential weakness of the fingers in comparison to the thumb has to be compensated for and that the rhythmical precision of the four note groupings has to be maintained.
Perform the following exercises with the finger patterns **p-i-a-m** and **p-m-i-a** as well.



12



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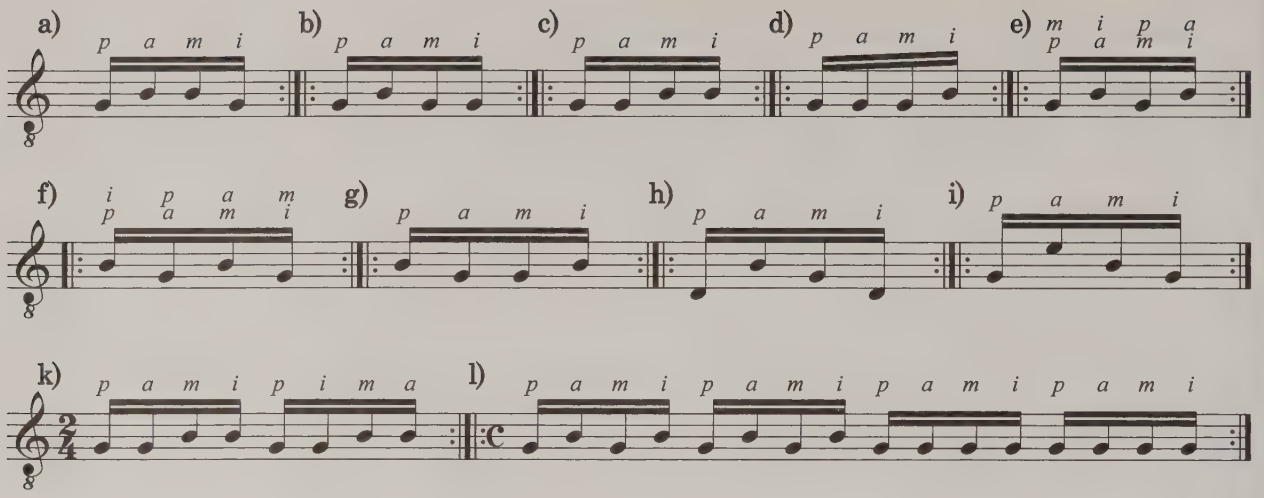
13

Supplementary Exercises

1) for p-a-m-i

Chapter "I. Arpeggios" (p. 48)
Exercises A1 (p. 54), A2 (p. 55), A4 (p. 61), A13 (p. 72), A14 (p. 73),
Exercise A23 Intensive Training (p. 87), replace p-i-m-a with p-a-m-i here.

Chapter "II. Coordination of the Left and Right Hands" (p. 90)
Exercises 42a)–d) (p. 109), 49a)–d) (p. 114).

2) for a-m-i

Chapter "II. Coordination of the Left and Right Hands" (p.90)
Exercises 15–19 (p. 96), 26 and 27 (p. 100), 33 (p. 102), 42i)–k) (p. 110),
43g)–h) (p. 111), 50 (p. 114).

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VI. Flamenco Techniques

Flamenco techniques have been a part of classical guitar technique for years and are employed in many original pieces, not only just in those of Spanish origin. The important flamenco technique for classical guitarists, besides the "pulgar" (Spanish for thumb), is the rasgueado technique. The "golpe" technique can only be performed on a flamenco guitar with a pick guard and is rarely used in the classical repertoire.

The biggest difference between flamenco and classical technique, besides the inclusion of the pinky (here indicated by c), is the reverse motion of the fingers during a rasgueado attack. Practicing this reverse movement strongly influences the reflex development of your fingers and thereby influences the speed of all your RH patterns in general.

Rasgueado Technique

In rasgueado technique, the fingers hit the strings with the outer side of your fingernails during downstrokes, the thumb with the outside of its fingernail during an upstroke. The movement is fast and percussive, originating from a bent, fist-like position of the fingers whereby the fingernails of **i**, **m**, **a** and **c** lightly touch the palm of the hand. After the attack, the fingers are stretched at each joint. The primary motion occurs in the middle and base joints.
The fingers hit several strings. The primary mistake made by many non-flamenco guitarists is that their attacks are too slow or even performed in a strumming fashion which produces a diffuse sound. A good flamenco rasgueado requires, however, a rhythmically percussive attack.
The upstroke of the fingers corresponds to a tirando (free stroke) across several strings. This also has to be performed quickly and percussively. The following photos refer to Exercise 4.

The starting position of the RH before the downstroke with bent fingers

after attacking with c

after attacking with a

after attacking with m

after attacking with i

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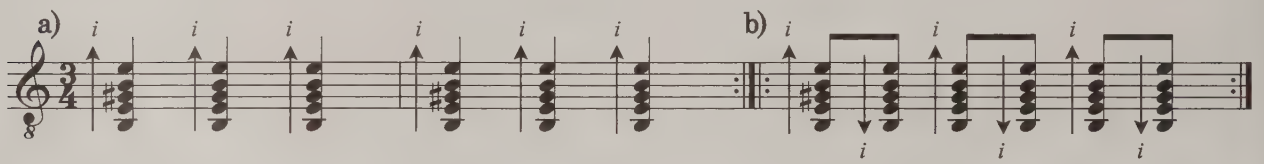
Rasgueado with One, Three and Four Fingers

The index finger (**downstroke and upstroke**), which is frequently used in rasgueado passages from the classical guitar repertoire, has to be practiced individually.

The thumb is placed on the 6th string with a slight amount of pressure.

↑ The arrow pointing up indicates a downstroke across several strings, from the 6th to the 1st.

↓ The arrow pointing down indicates an upstroke across several strings, from the 1st to the 6th.

1 **Practice with m, a and c as well.**

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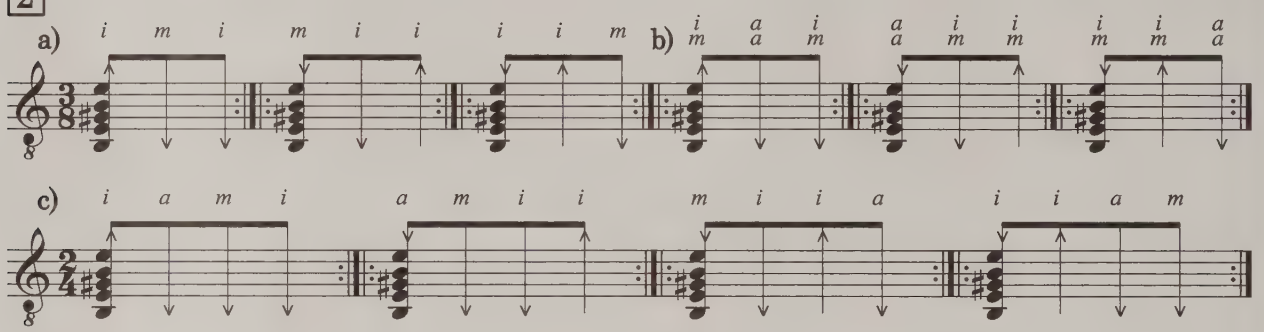

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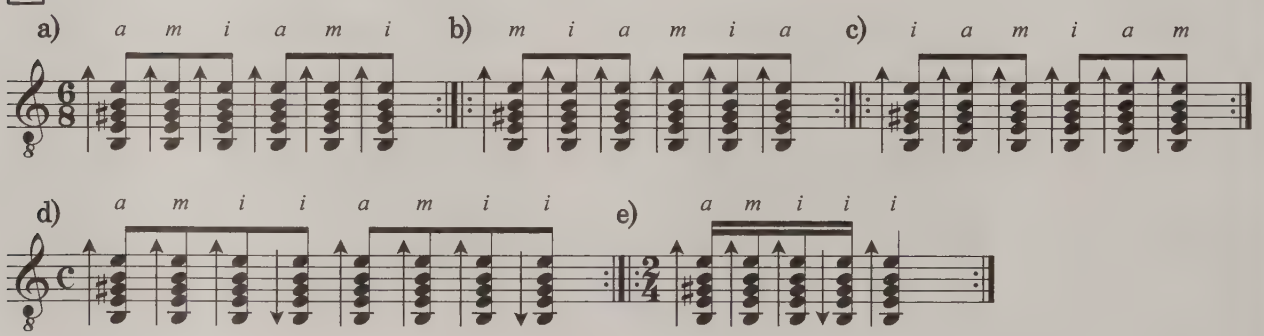
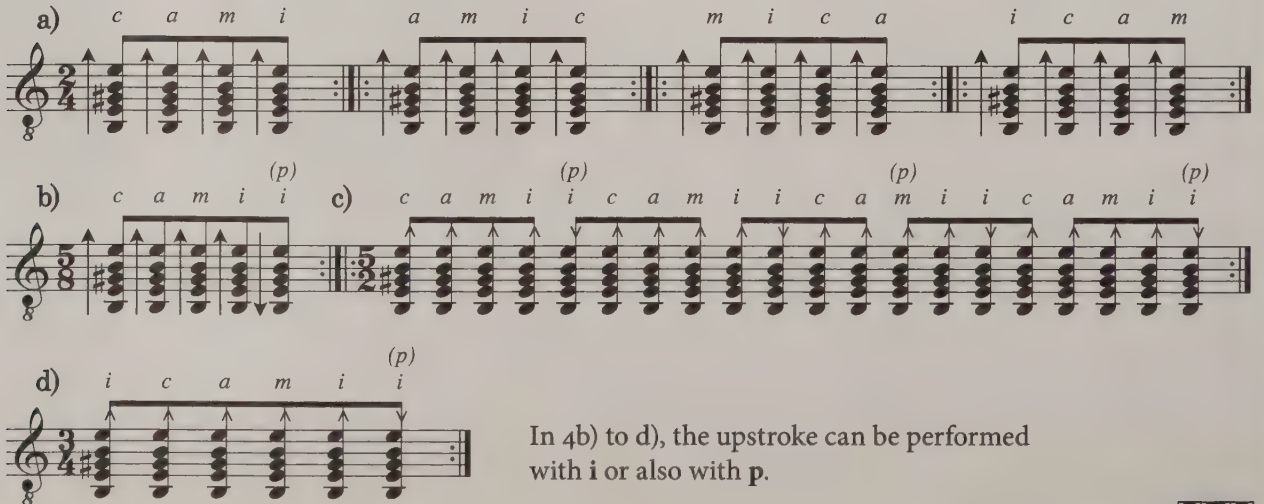

4



In 4b) to d), the upstroke can be performed with **i** or also with **p**.

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Rasgueado with Thumb and Fingers

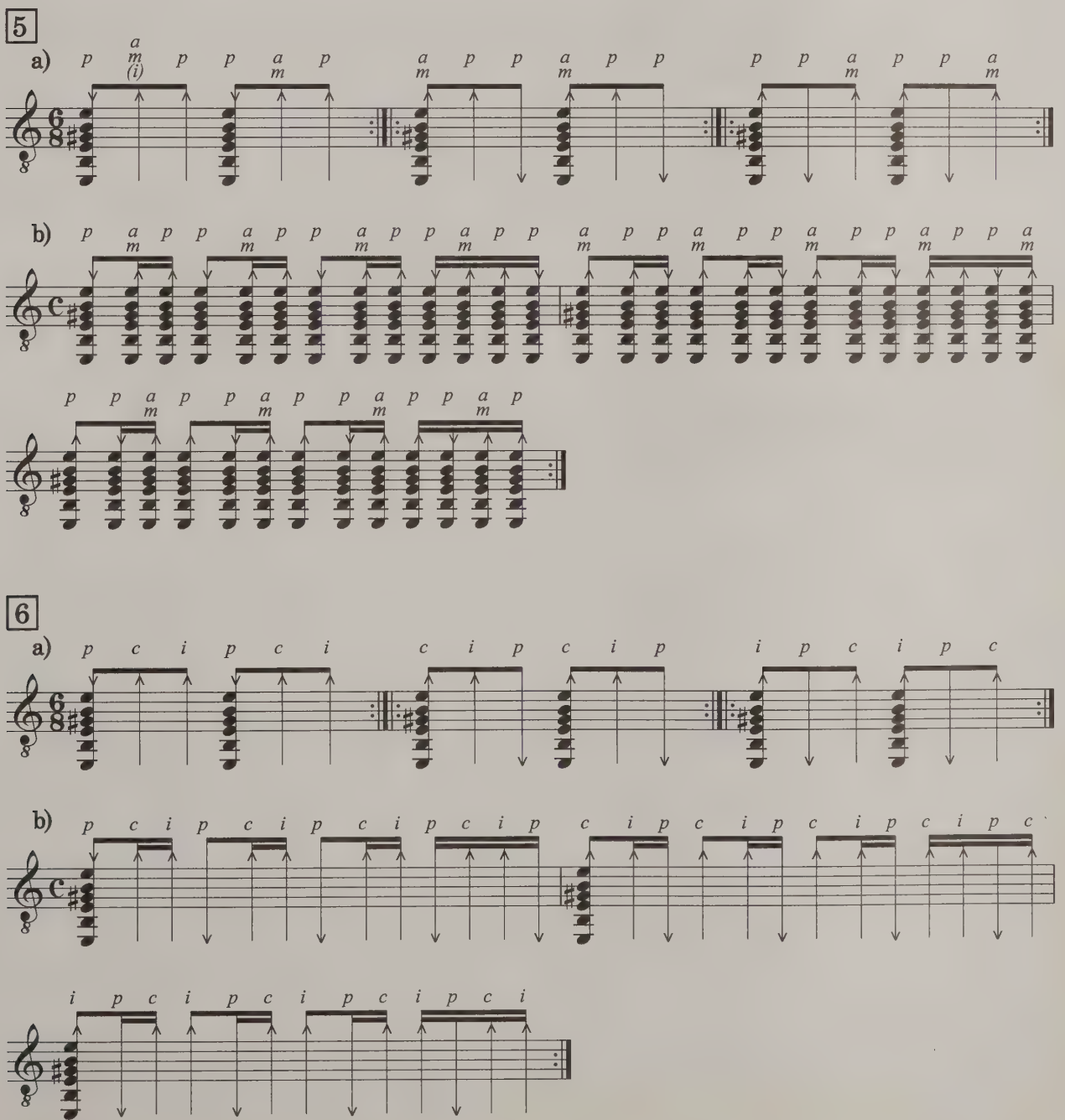
The following patterns in triplets are frequently used in typical flamenco rhythms. The motion of the thumb and fingers originates in your forearm in a rotating fashion. When the individual attacks are performed very quickly, the rotating movement appears as if your hand is shaking.

The starting position of the thumb before the upstroke

thumb after the upstroke

ami after the downstroke

thumb after the downstroke



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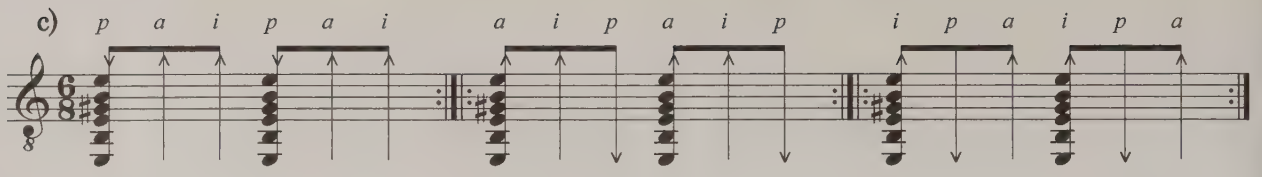
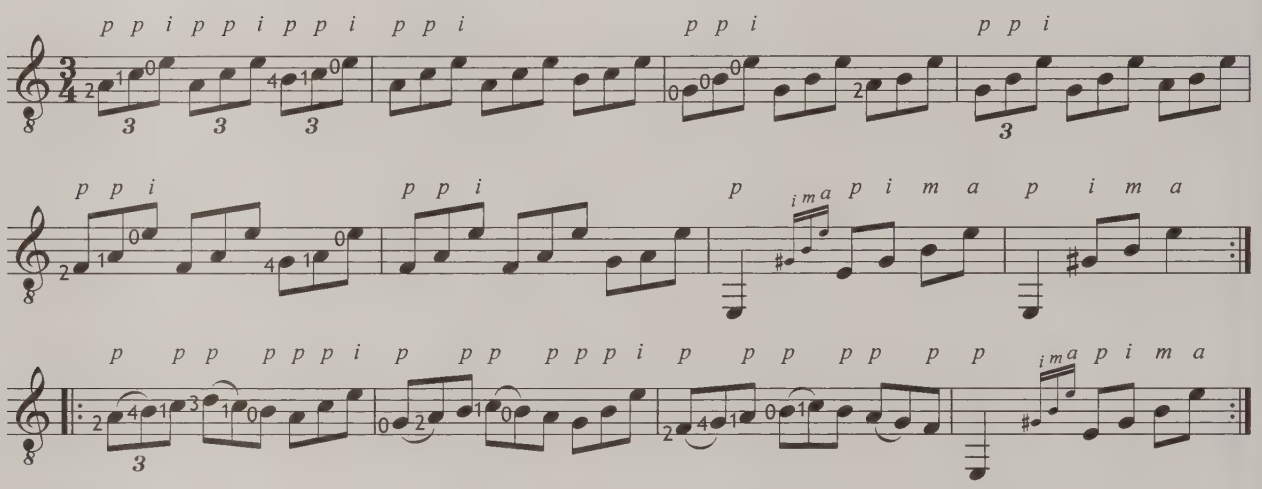

Pulgar Technique – The Special Thumb Technique in Flamenco

The thumb plays an important role in flamenco technique. As a melody finger it performs also on the treble strings. In arpeggios and as a percussive accompanist for singers, it has to be able to repeat very fast, even when playing chords. The combining of these techniques is called "Alzapua."

7



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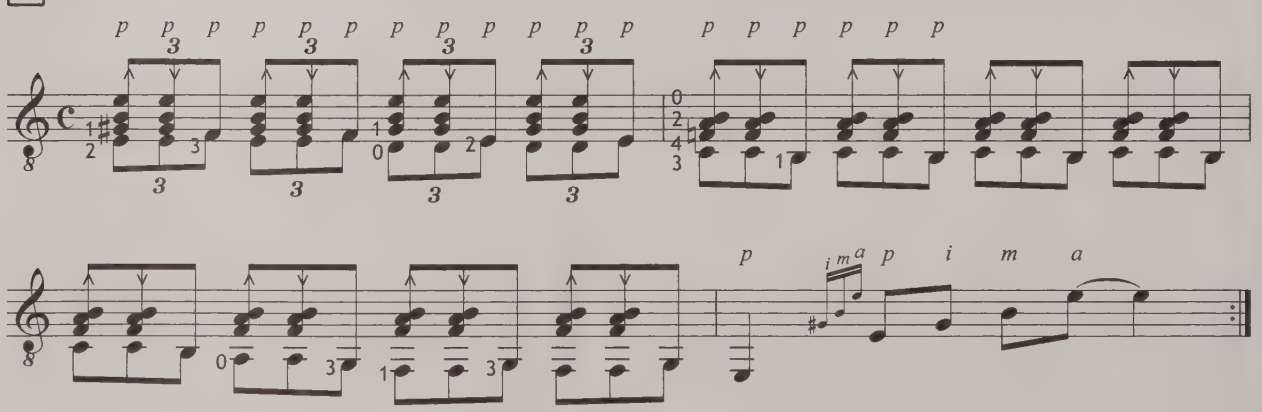
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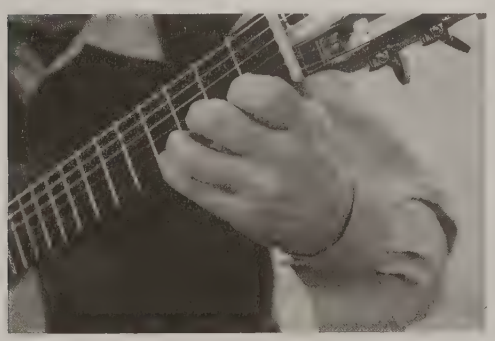
VII. Supplementary Technical Exercises for the Left Hand

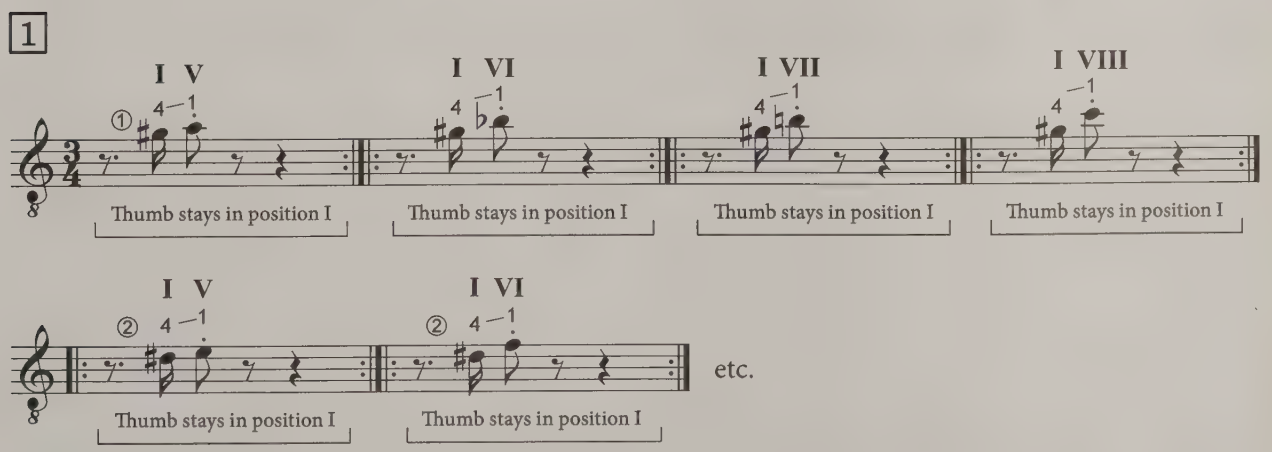
Shift Exercises

The sequence of motions regarding the various shifts are explained in detail in Part One, page 30. By playing scales (p. 119), you can intensively practice and study all three types of shifts. But the complexity of playing scales can also distract your attention away from the actual difficulties involved with shifts and their perfect execution. The following, specialized shift exercises are ideal supplementary material and are excellently suited for the concentrated, analytical practice of this technique.

Preparatory Shift Exercises

In order to execute the shifting movement in a smooth and harmonious fashion, the thumb cannot be allowed to just rigidly move along with the fingers. It has to act as a flexible pivot point for the other fingers. In the following exercise, **only the fingers perform the shift** while the thumb remains at its spot in position I and only executes a small rotation to the left.



Thumb stays in position I

Practice on the 3rd string as well!

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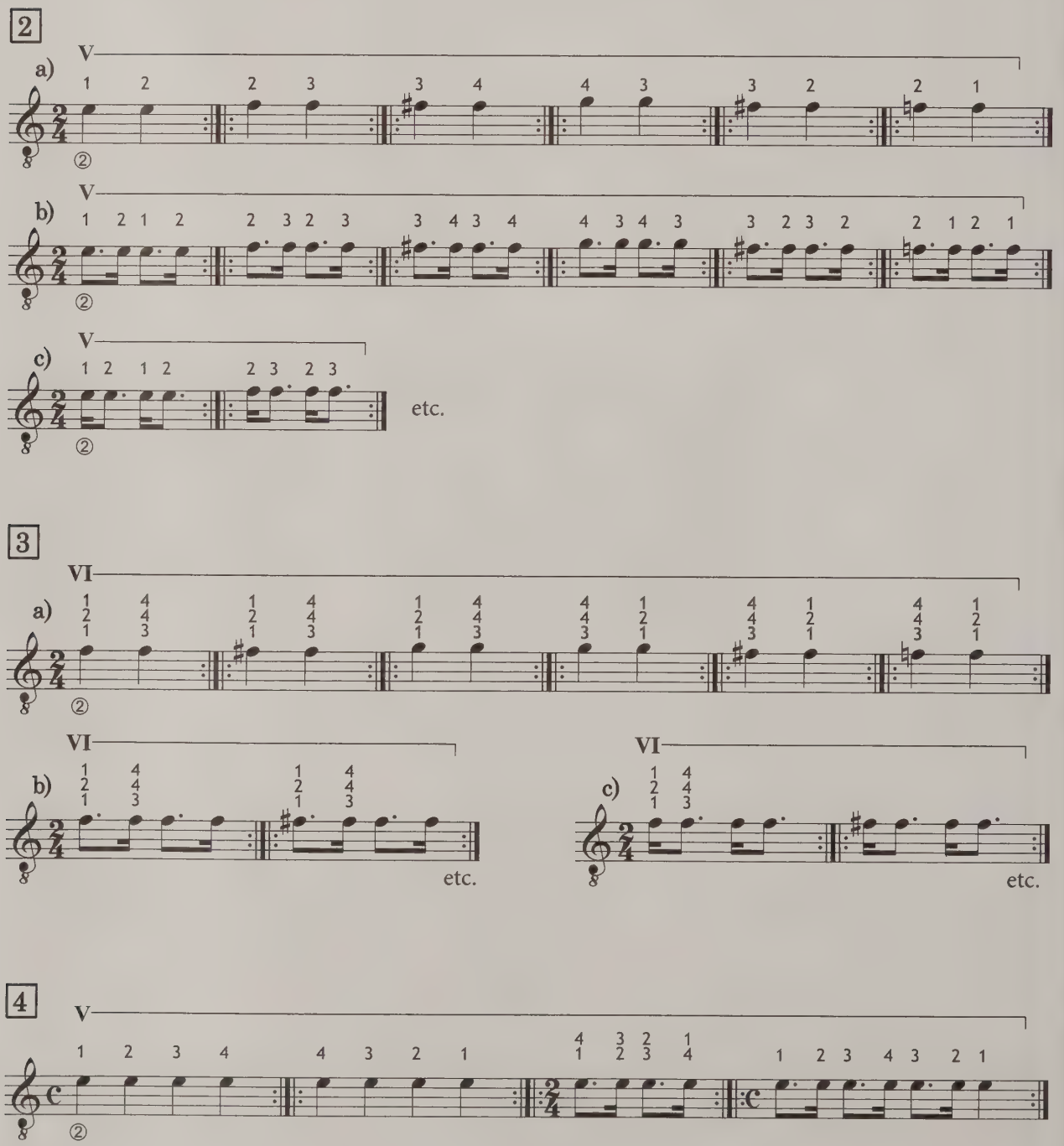
Shifts Resulting from Finger Motion

An important technique is the indirect shift of two fingers that actually move into different positions although **the thumb, which serves as a pivot point, stays in its original position**. As in the preceding preparatory exercise, **only the fingers perform the shift**. In this technique of substituting notes by using different fingers, the hand is in motion either away from or towards the thumb while the fingers, for example with 1–4 or 4–1, stay close together and in doing so the flexibility of your tendons and joints will improve. In the following exercises, two fingers of your LH alternate playing the same note (the most common practice for this type of shift) or two different notes that are a half step apart.

Repeat each exercise 4 to 6 times on every string!



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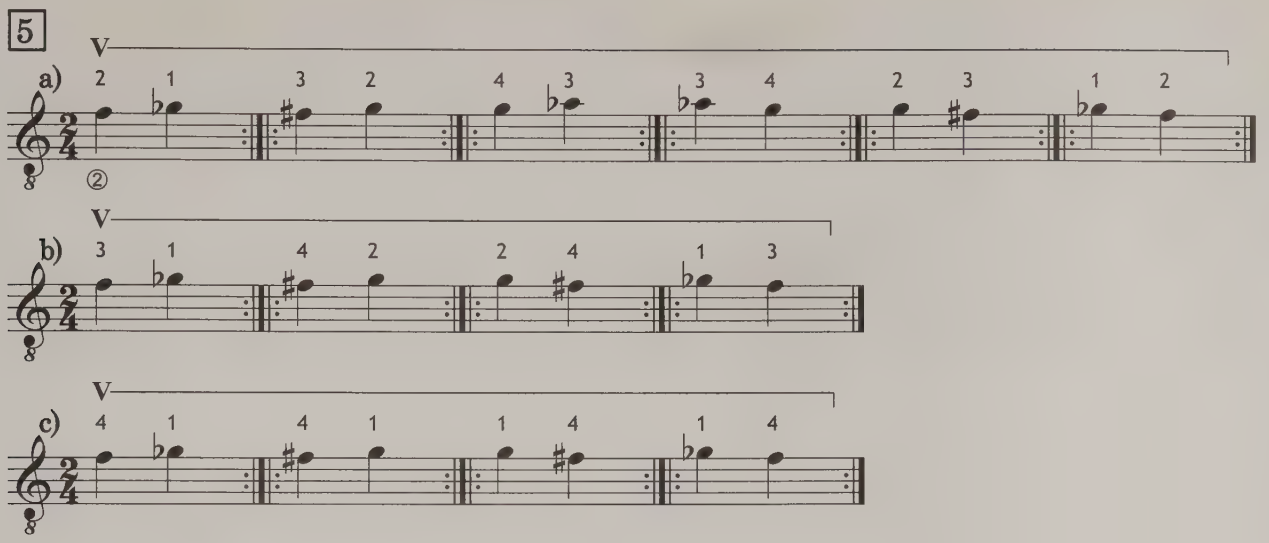
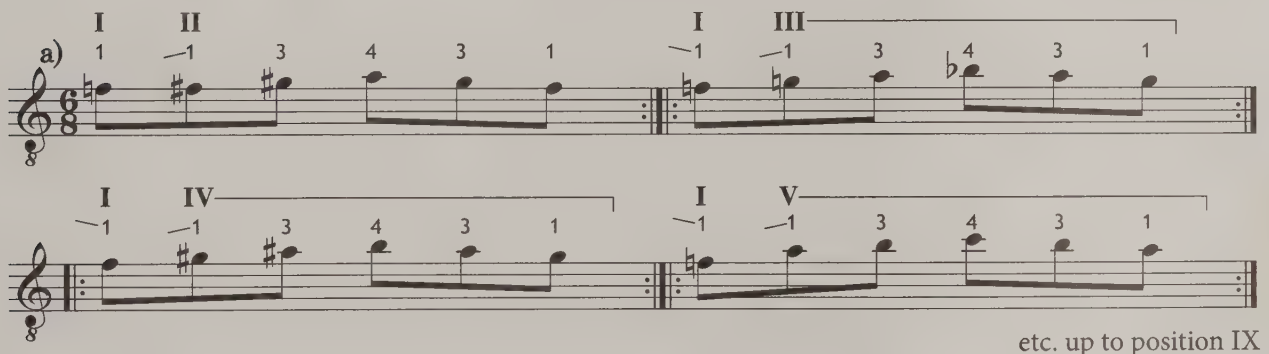
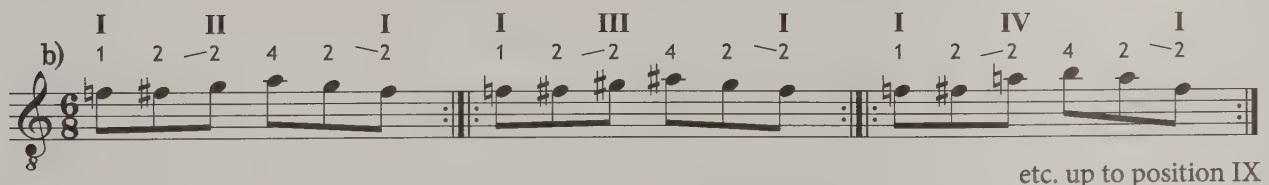
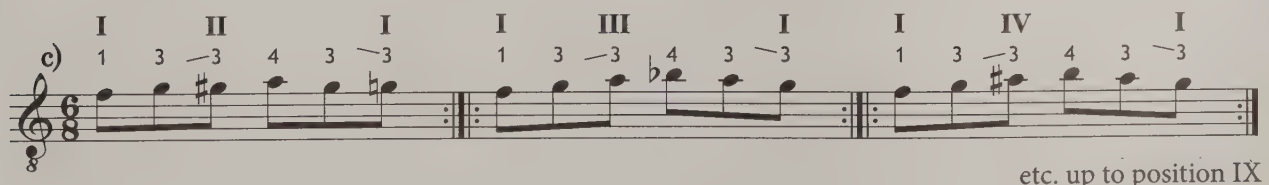
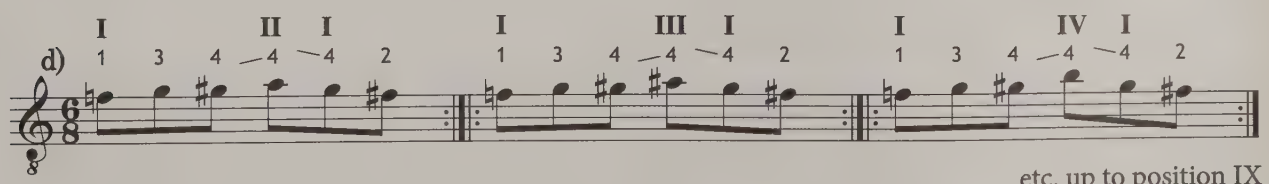

Use similar rhythms as in Exercises 1 to 4 on page 173.

Direct Shift Exercises

6 Practice on all strings!

etc. up to position IX

etc. up to position IX

etc. up to position IX



etc. up to position IX

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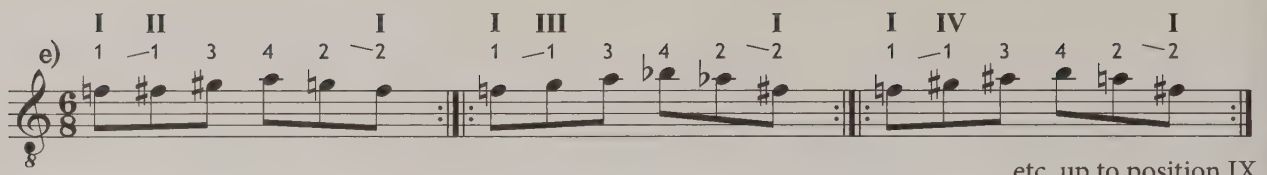
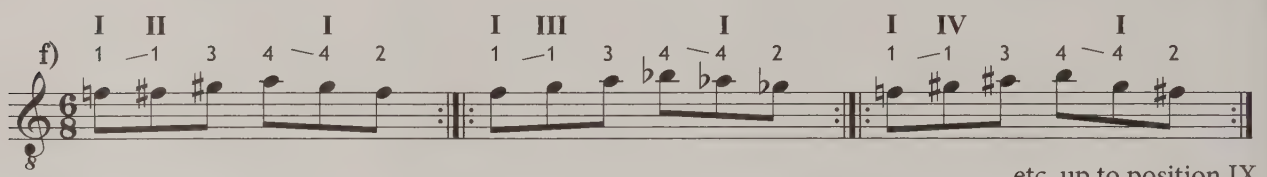
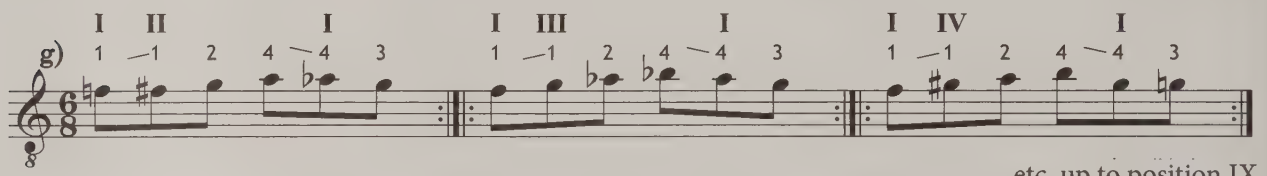
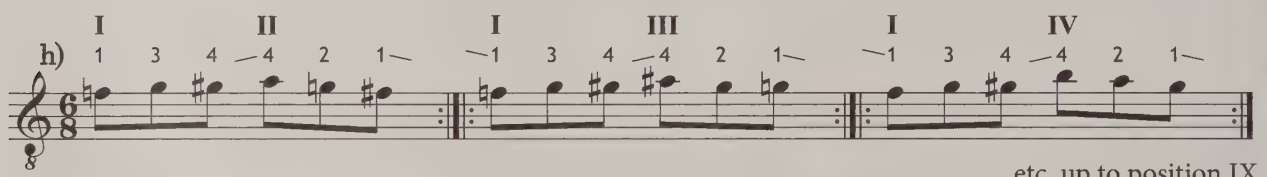
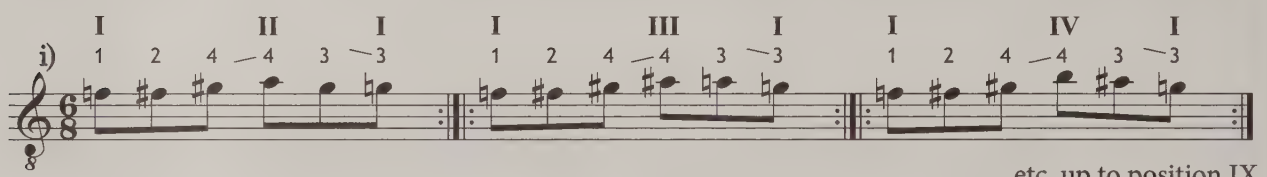
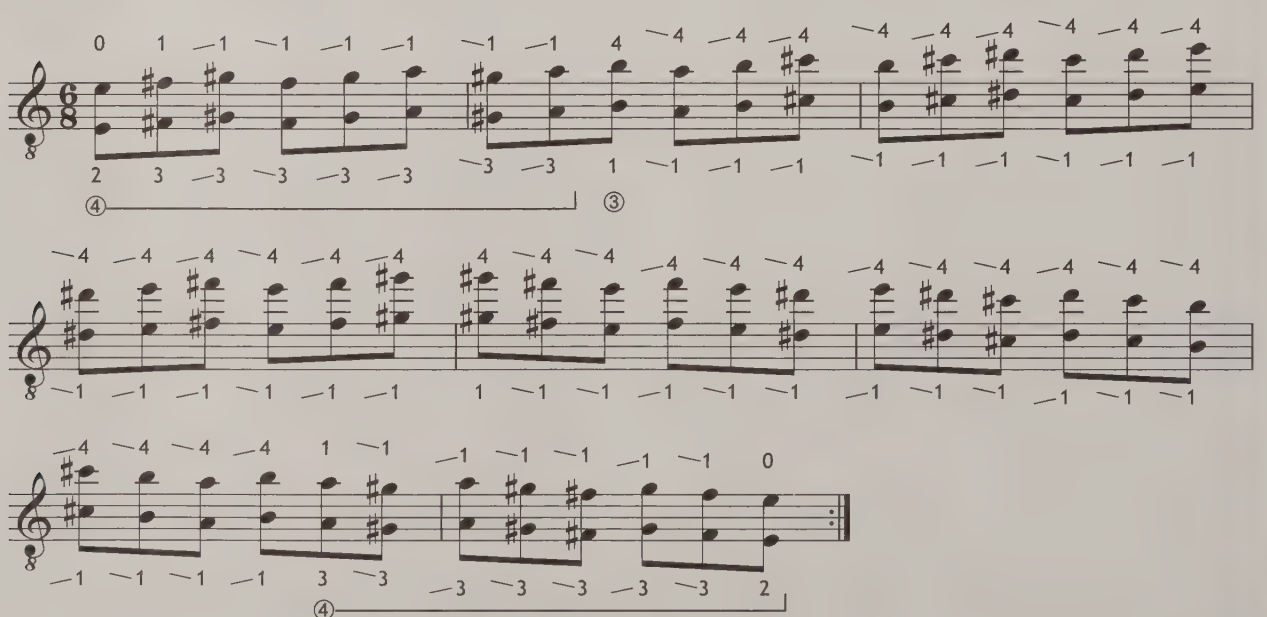

etc. up to position IX

etc. up to position IX

etc. up to position IX

etc. up to position IX

etc. up to position IX

7 Octaves in E Major



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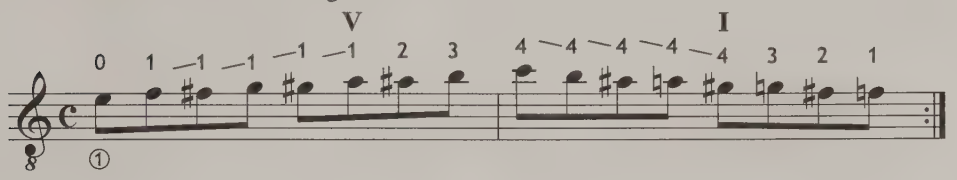
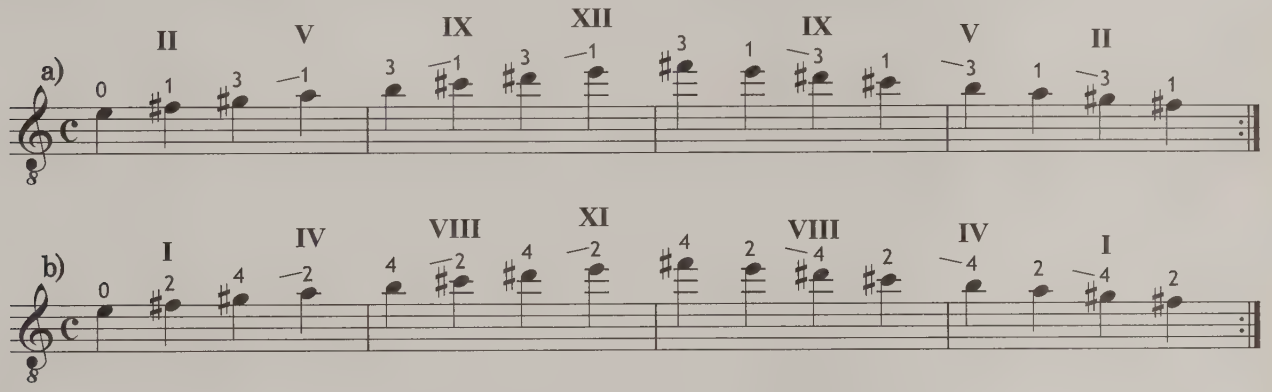
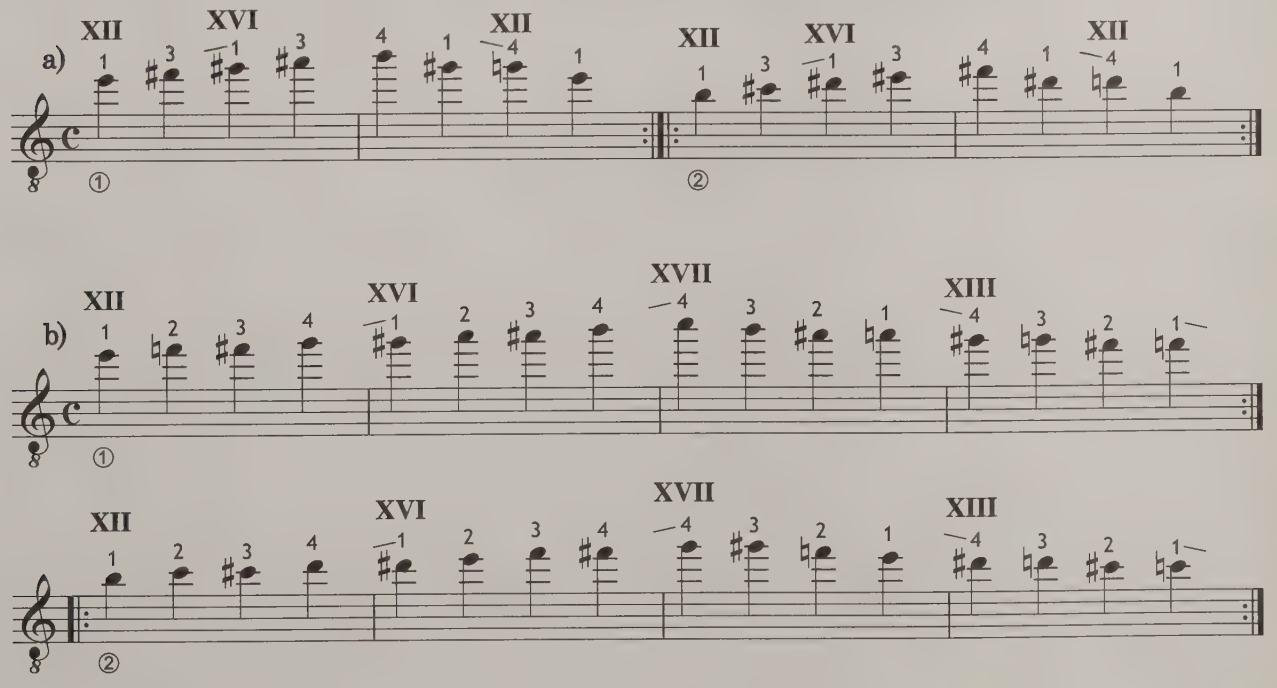
8 **Direct Shift in Half Steps, Ascending with the 1st Finger and Descending with the 4th Finger**

Practice on all strings!

Indirect Shift Exercises

9 Play with 1–3 and 2–4 on a single string. Practice on all strings!

10 Practice in the upper positions on the 1st and 2nd strings!

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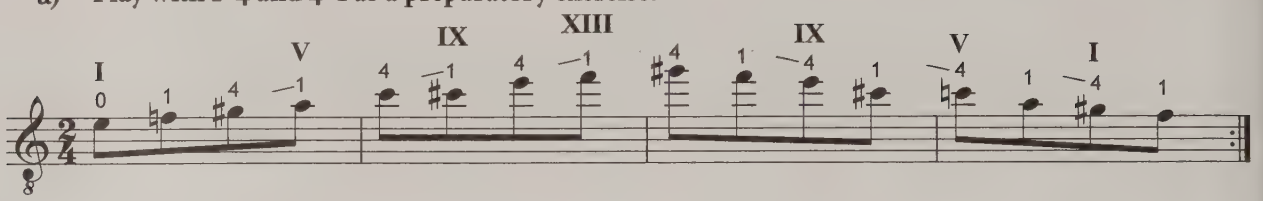
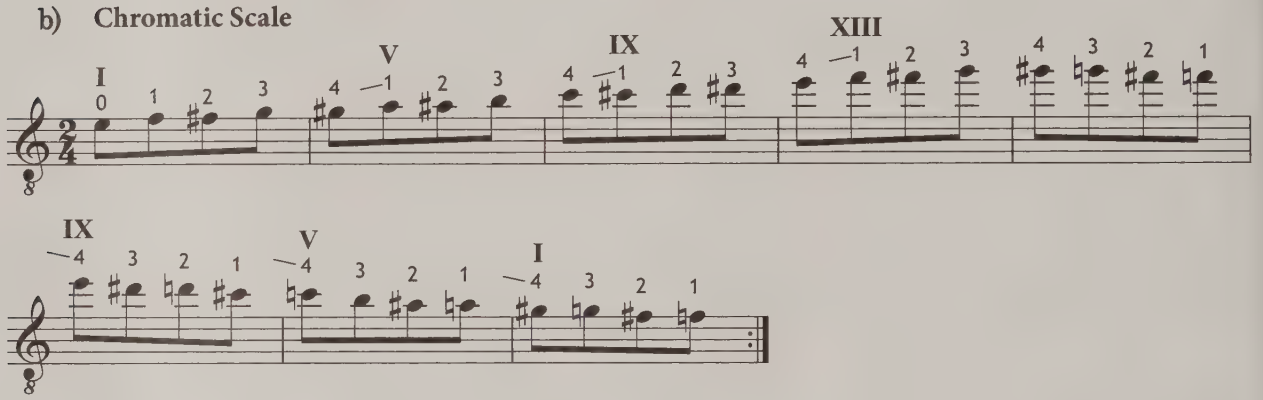
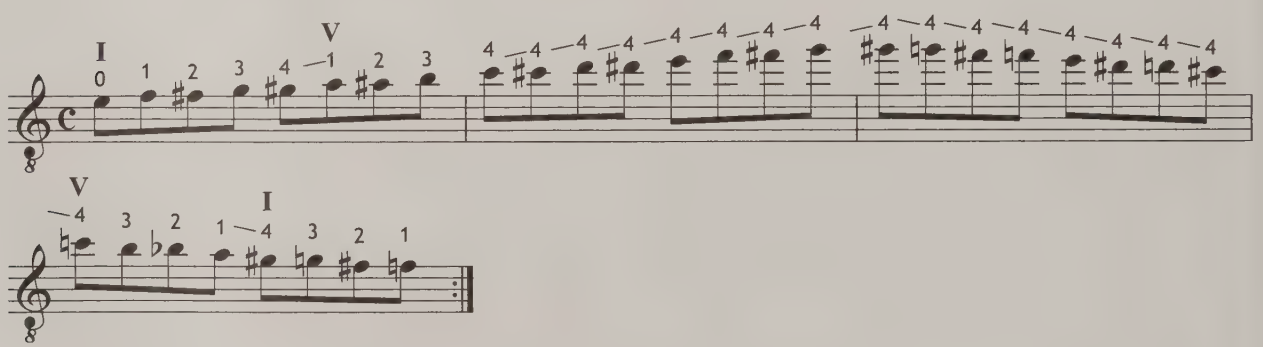
Chromatic Scale on a Single String

11 Practice on all strings!

a) **Play with 1–4 and 4–1 as a preparatory exercise:**



b) **Chromatic Scale**

12 **Chromatic Scale on a Single String (starting with position V, only use the 4th finger)**
Practice on all strings!



When studying the 24 scales (see page 119) over 2 and 3 octaves, you can intensively practice every shift imaginable. Similarly, the short exercises for scales in major and minor are also ideal shift exercises (see page 124).

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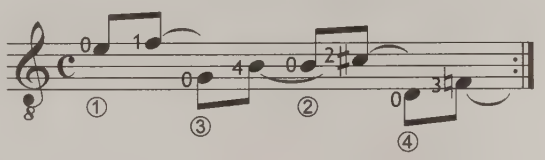
Left Hand Independence Exercises

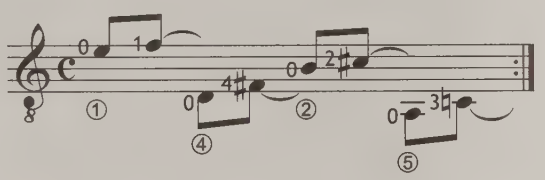
Special independence exercises for the left hand strengthen your muscles and train the agility of your fingers which, in polyphonic playing, have to be able to act entirely independent of one another. There are basically three types:

1. Active placement
2. Active releasing
3. Passive leaving the finger on the fretboard

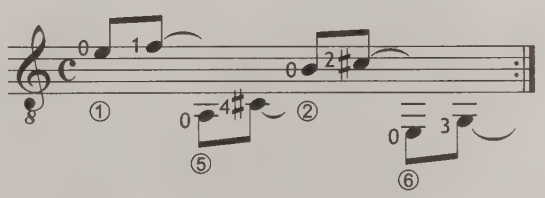
Exercises for Leaving the Fingers on the Strings

The following exercises can be played on different strings whereby you either have to stretch your fingers more or less (as it also depends on the size of your hand and fingers):

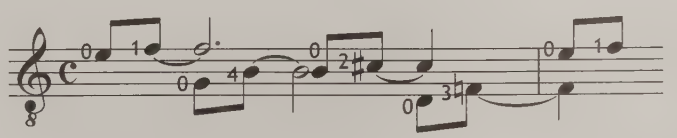
On the 1st, 3rd, 2nd and 4th strings:

On the 1st, 4th, 2nd, and 5th strings:



On the 1st, 5th, 2nd, and 6th strings:

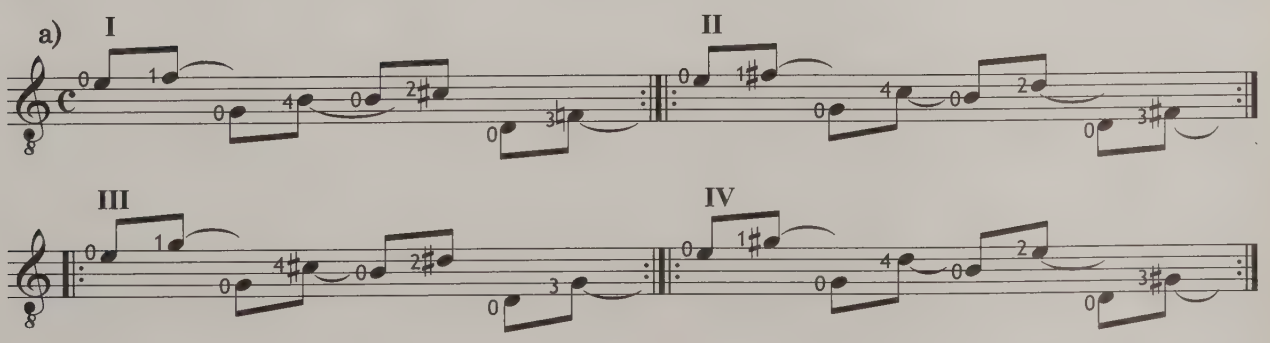


They are notated in a simplified fashion but should sound as follows. Example Exercise 13a):



etc.

13

a)

etc. up to position VII

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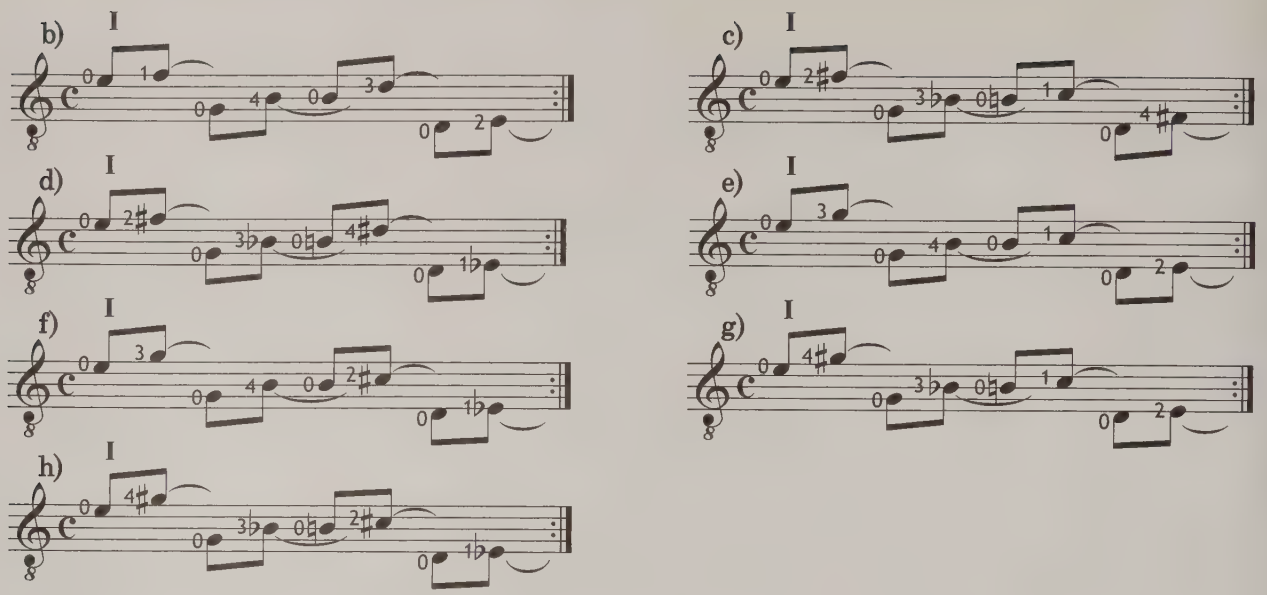
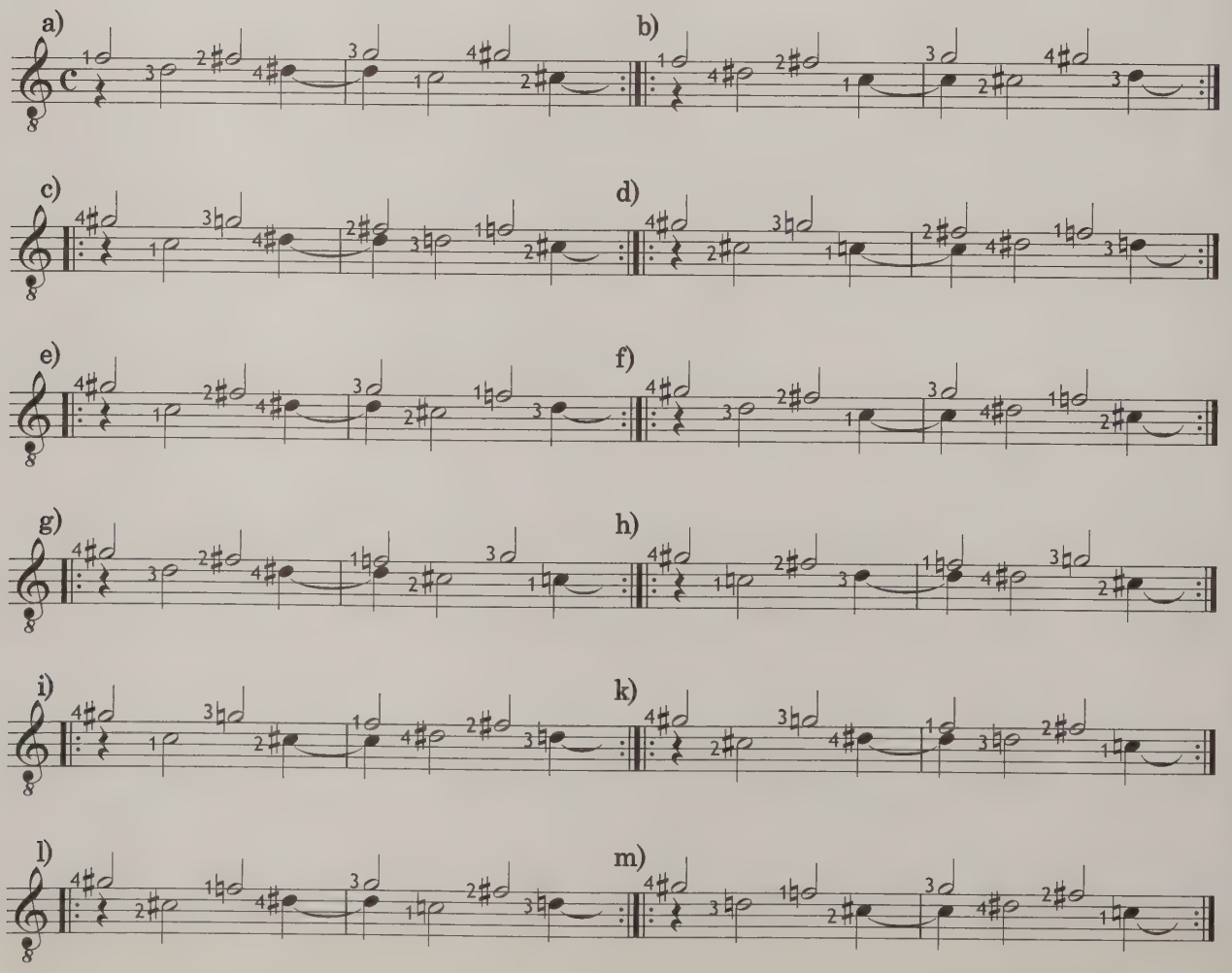
Also practice 13b)–h) in different positions!

14 12 Independence Exercises on Two Strings

The following two part exercises can be played in a lot of different ways. When both parts sound in succession (the hardest form), you have to be meticulous about keeping your fingers on the strings.



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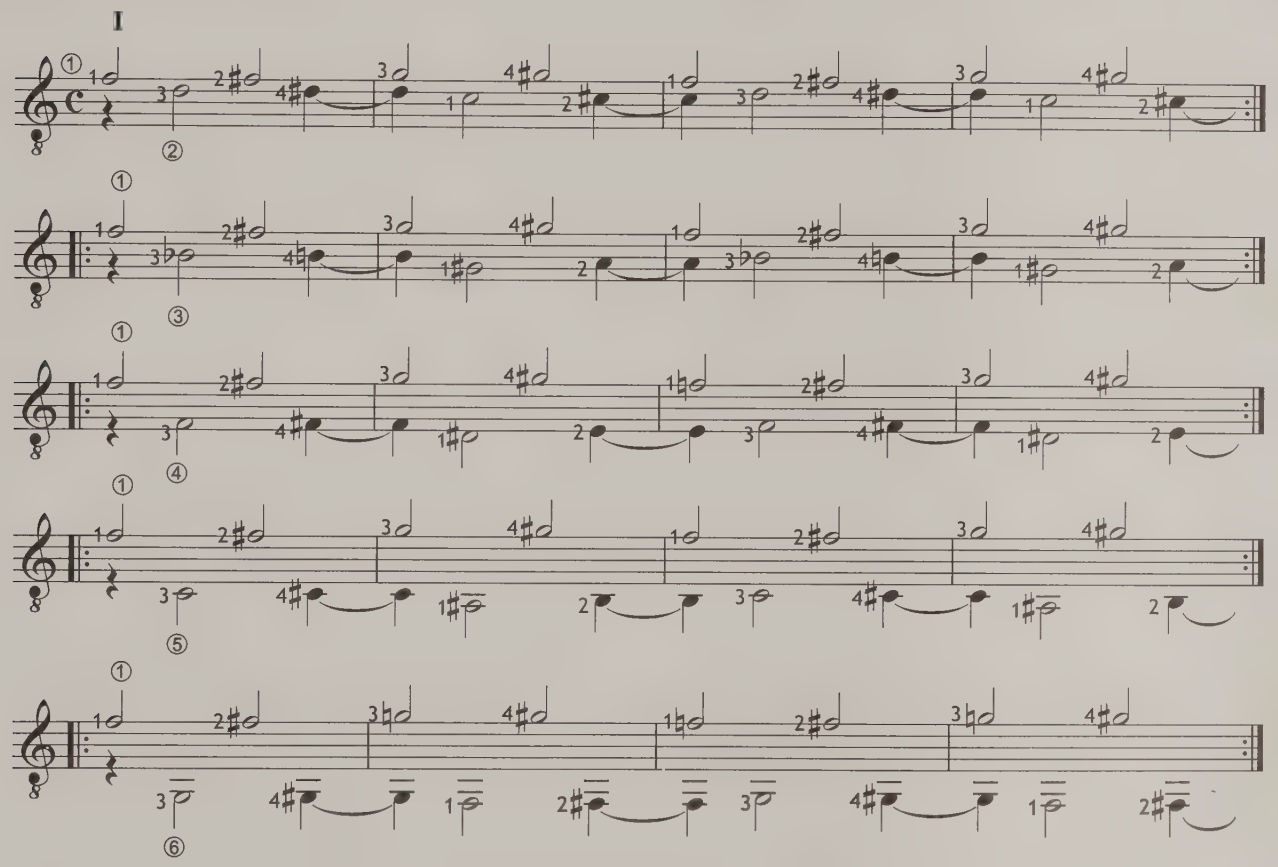
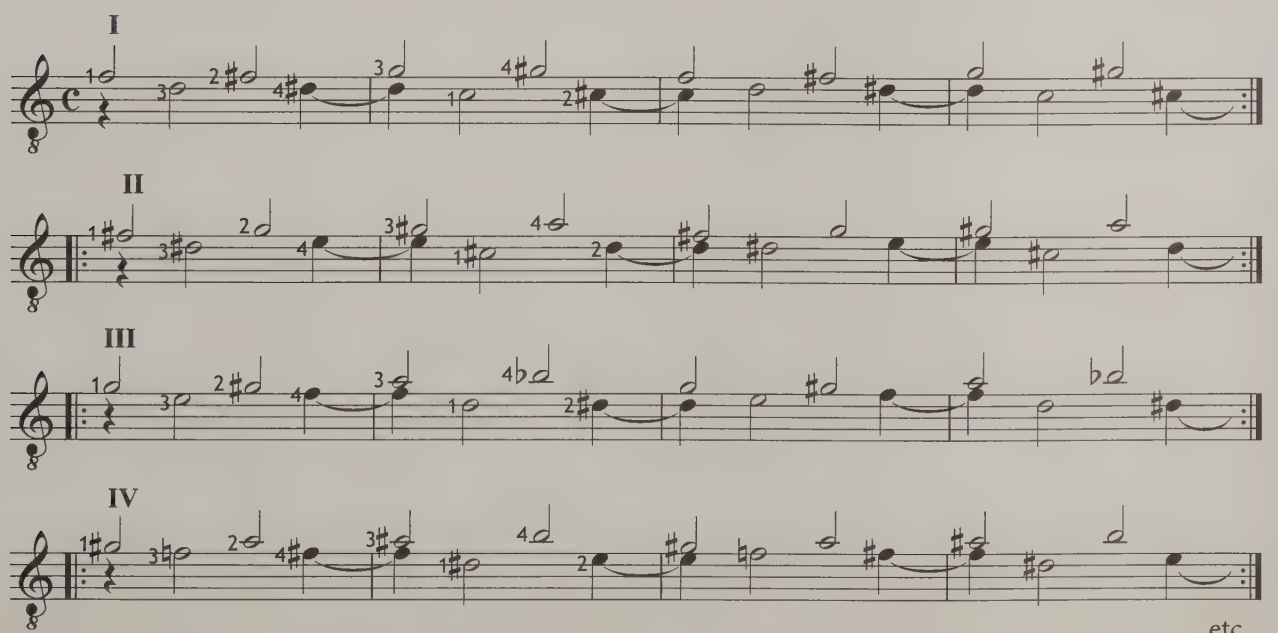
Four Examples for Practicing

In the following, options for practicing are based on Exercise 14a). Each variation presented is a challenge for the fingers of the left hand. 2 to 4 exercises a day are entirely sufficient.

1. The order according to the required degree of stretching (from easy to hard) is: 1st/2nd, 1st/3rd, 1st/4th, 1st/5th and 1st/6th strings. Very effective for the extreme stretching capabilities of your fingers! So not to strain your hand and fingers too much, start in an upper position (in position V, for example). Be especially careful with the 1st/6th strings. You should stop if any signs of tension or even pain appear!



2. In different positions, i.e. from position I to IV



etc.

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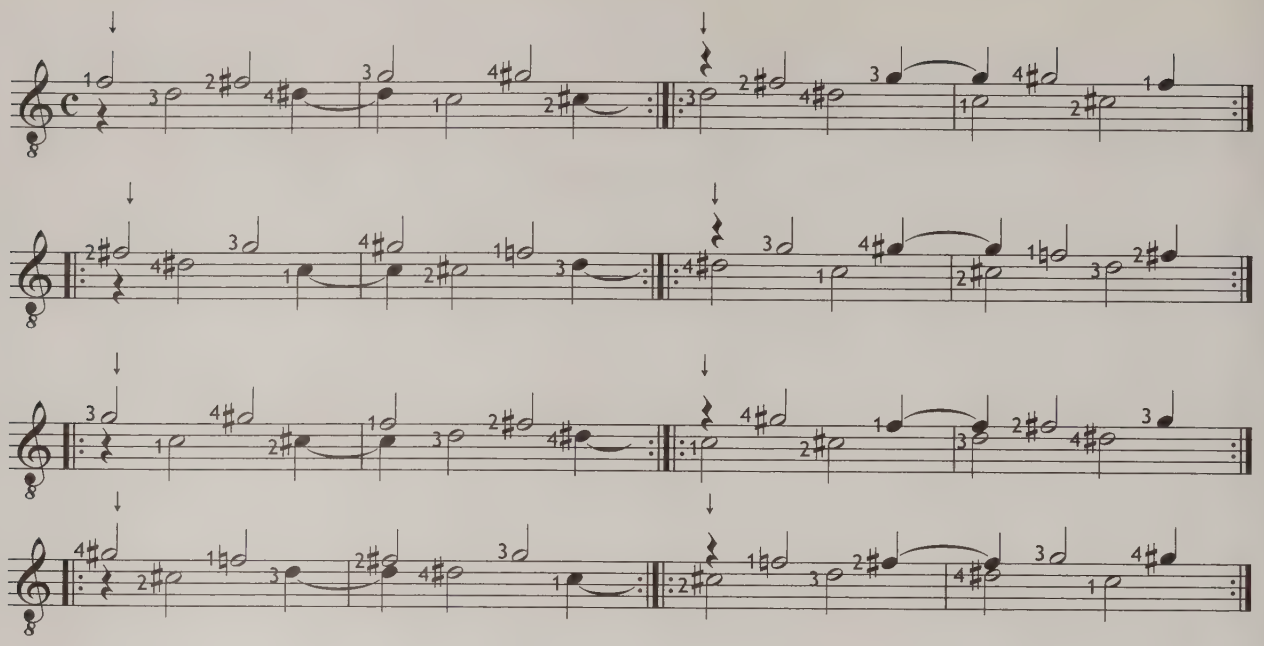
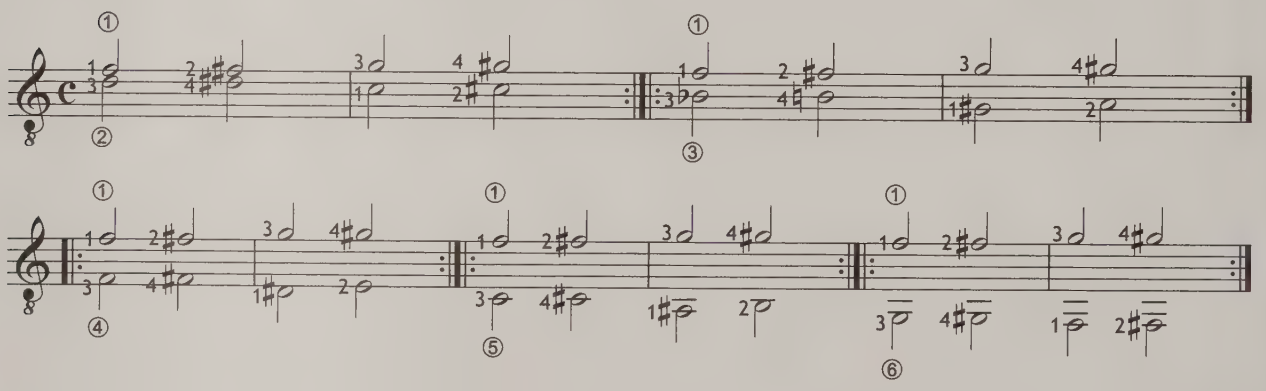
3. Further exercises emerge if you start with a different finger.



4. Two parts simultaneously
Also practice in different positions.



Independence Exercises for the Left Hand on Two Strings (Alternating Two Fingers)

The last, highly complex group of two part LH independence exercises trains all the basic, fundamental movements of the LH fingers. The alternating movements of 2 respective fingers performing 2 individual parts, each with different rhythmical values, is, on top of this, a tough mental task.

It is sufficient to practice the exercise on the 1st and 4th strings. Accordingly, they are presented schematically in this way. Referring to Exercise 15a) and b) as an example, four variations are presented in notated form. Other string options are 1st and 2nd, 1st and 3rd as well as the 1st and 5th strings.

Practice in different positions, for example from position I to V!

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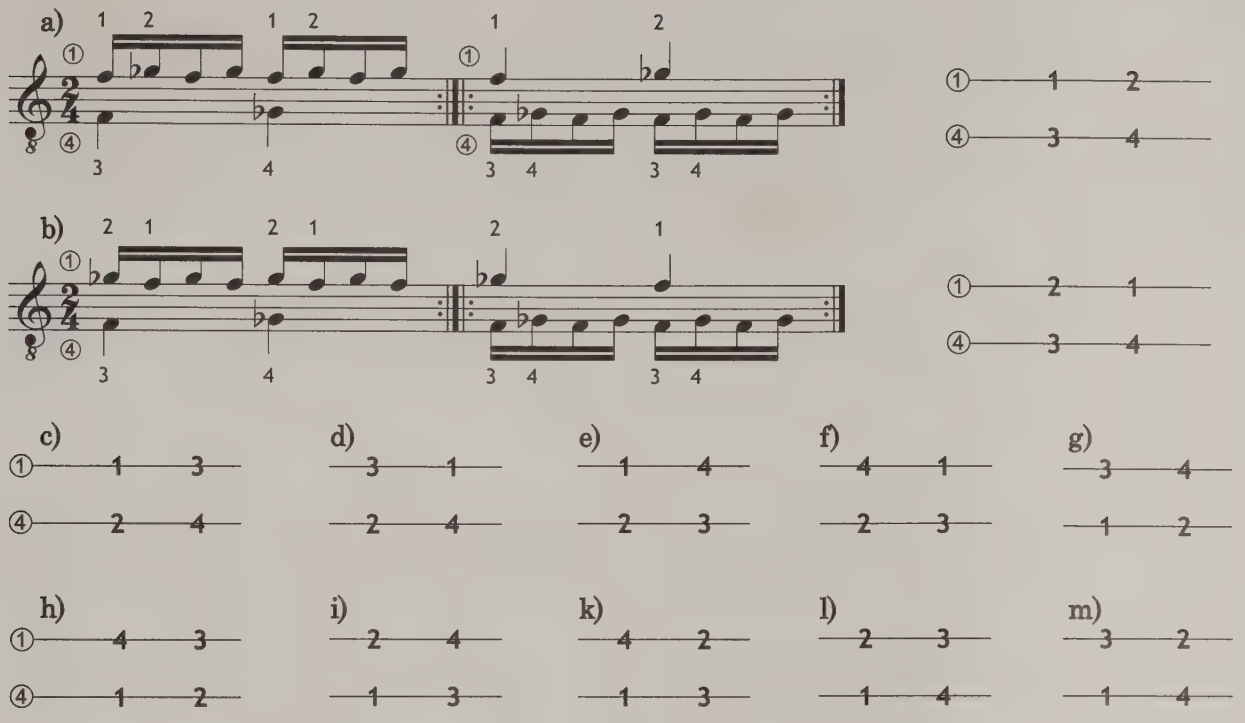
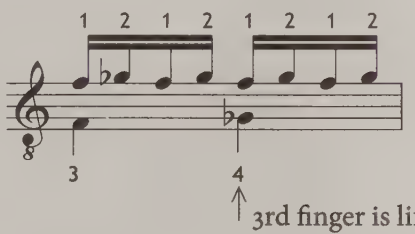
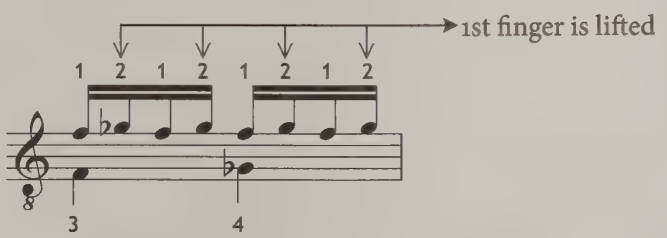
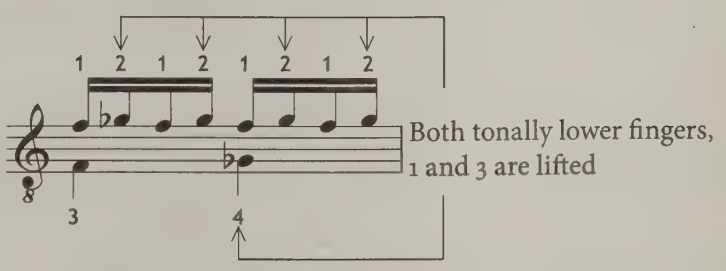
15

In order to be able to execute every conceivable command that your brain sends to your fingers and to improve the independence of your LH fingers, Exercises 15 and 16 should be performed with the following finger movements during three practice phases.

Phase 1
Concerns only the 4th string. When the 4th finger is placed on the fingerboard, the 3rd (tonally lower finger) is lifted.

Phase 2
Concerns only the 1st string. When the 2nd finger is placed on the fingerboard, the 1st (tonally lower finger) is lifted.



Phase 3
Concerns the 1st and 4th strings. When the 4th finger is placed on the fingerboard, the 3rd (tonally lower finger) is lifted. When the 2nd finger is placed, the 1st (tonally lower finger) is lifted.



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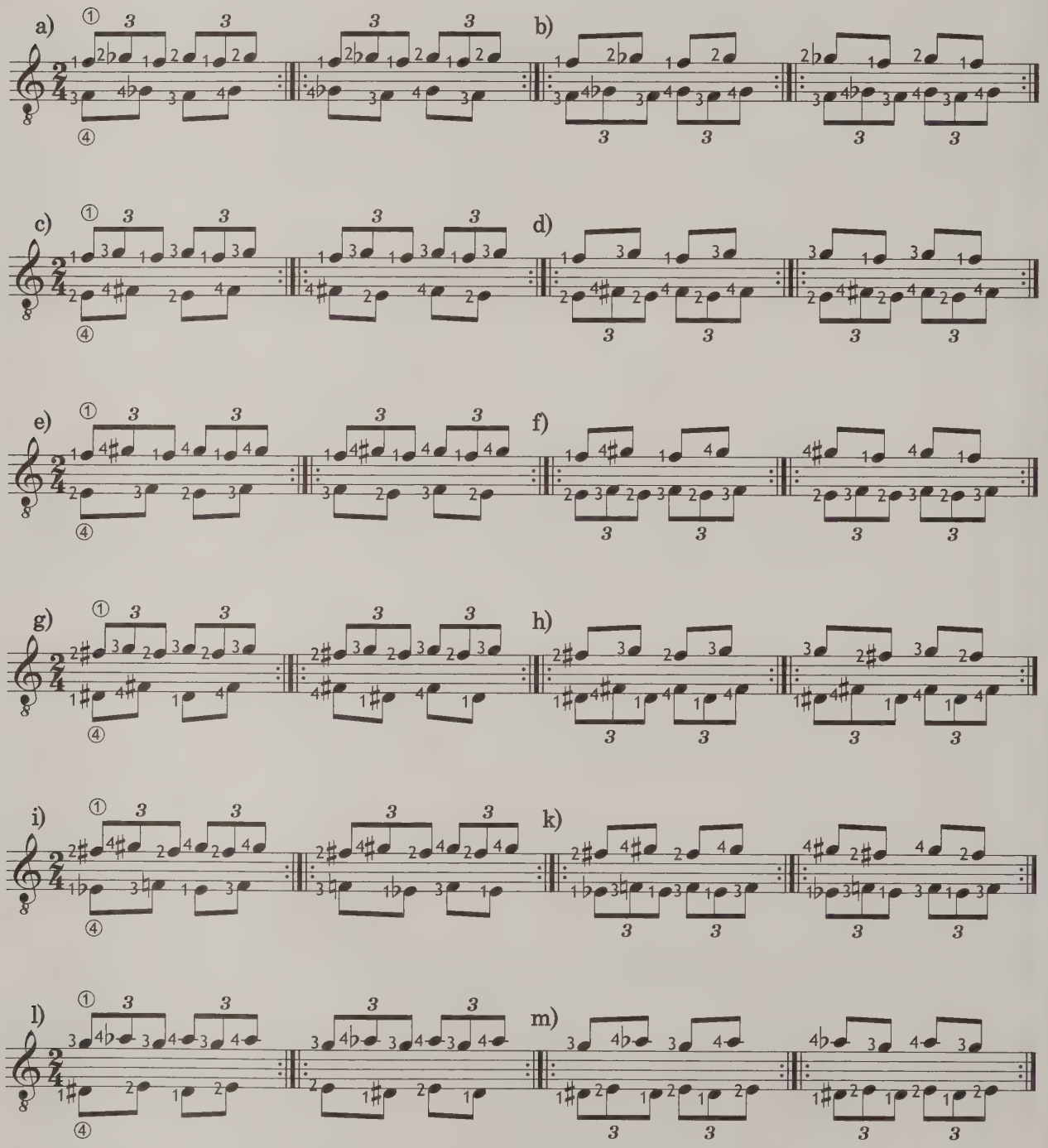
TIP 16 Rhythmic Variations on Exercise 15 ("Two Against Three")

The complicated rhythmical structure "two against three" requires the highest possible degree of finger independence. The identical practicing method used in Exercise 15 as well as the three practice phases (see page 183) should be applied here as well.



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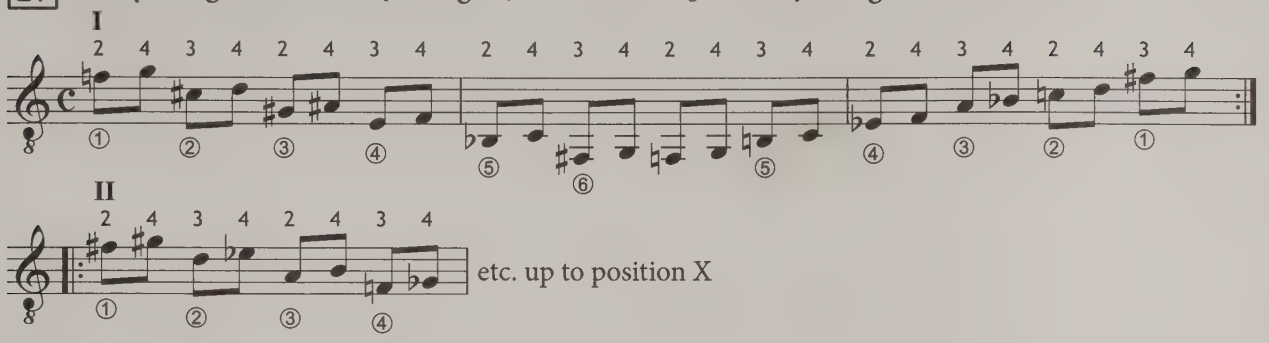
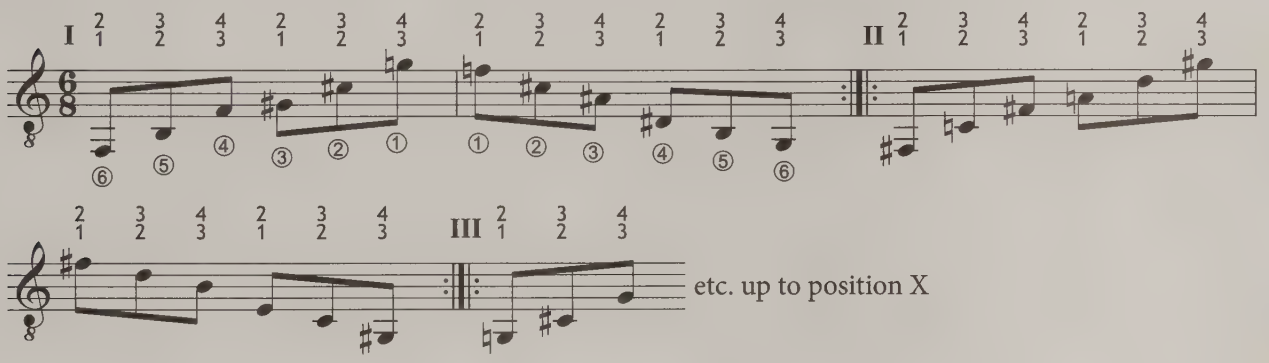
Strength and Independence Exercises

17 **Play using the 2nd and 4th fingers, then with the 3rd and 4th fingers:**

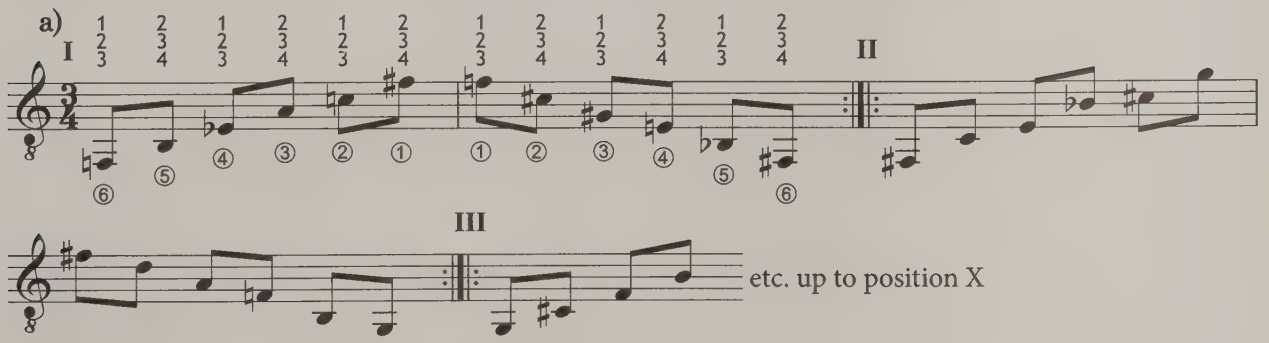


18 **Play using the 1st, 2nd and 3rd or 2nd, 3rd and 4th fingers:**

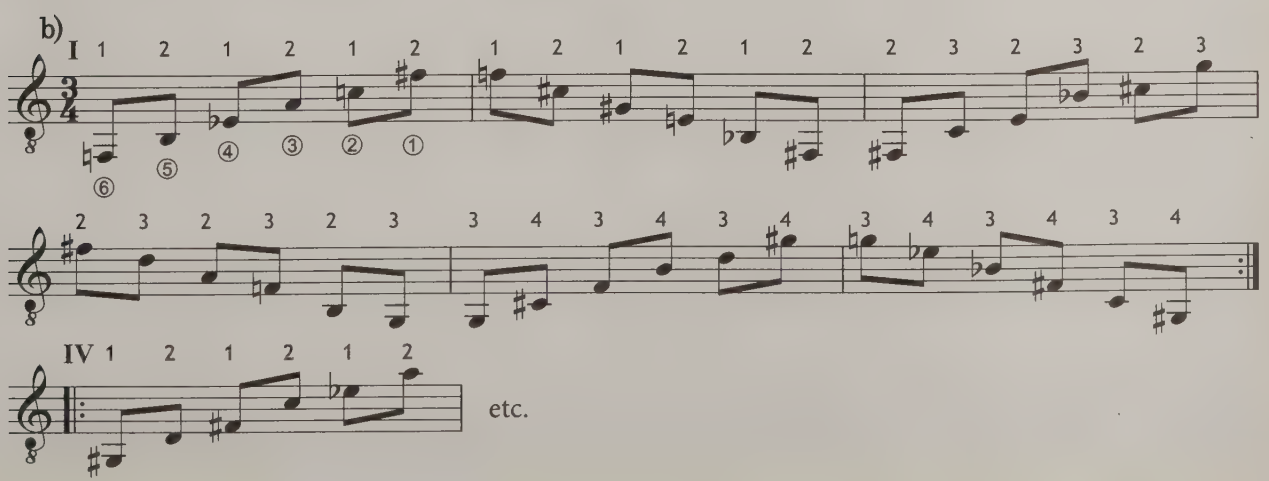


19 **Play using the 1st and 2nd, 2nd and 3rd, 3rd and 4th fingers:**

a)



b)



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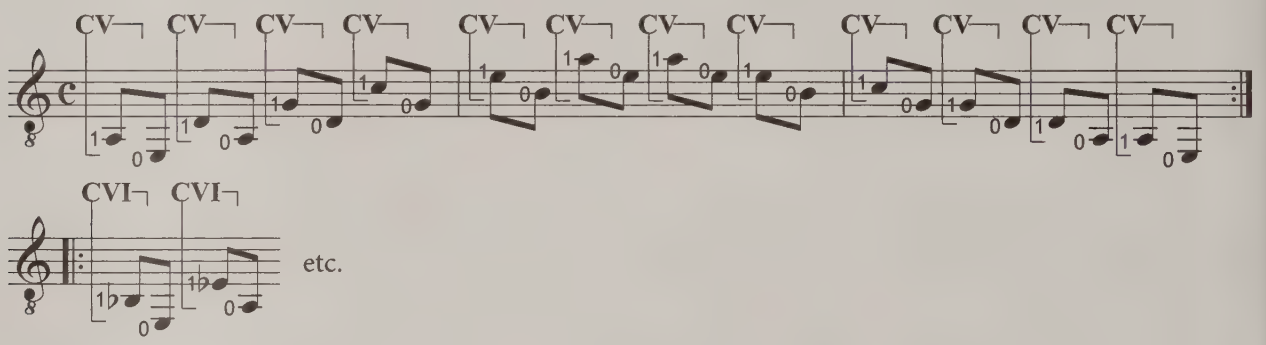
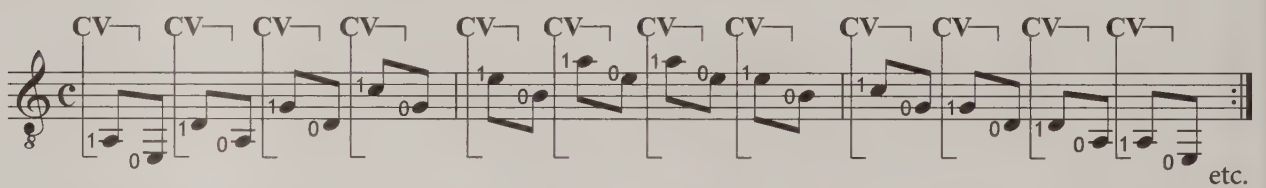
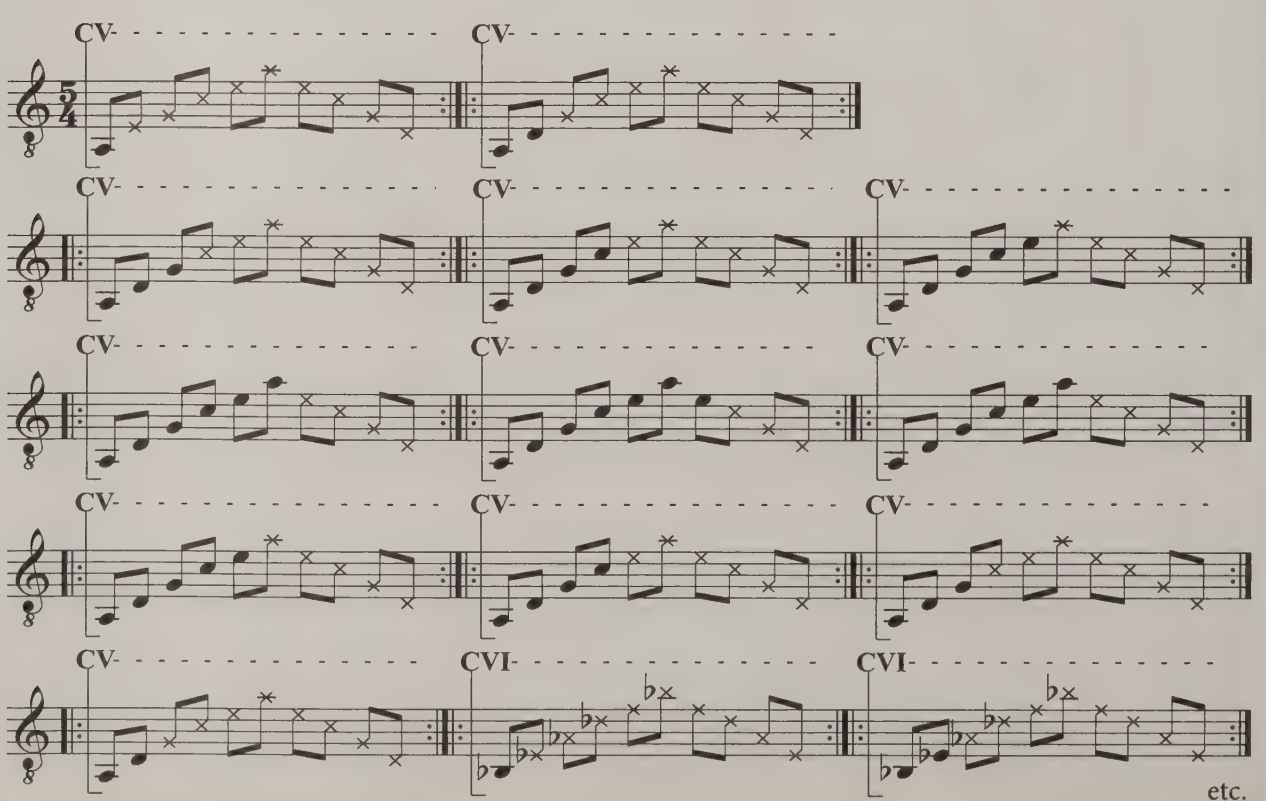
Barre Exercises

Barre technique is covered in depth in Part One (p. 32). In addition to the shifting of pressure within the barre finger (index finger), the primary focus of these exercises is the strengthening of the muscles in your fingers and hand. Barre technique is a technique of endurance. All exercises should be performed with great care so not to overstrain the tendons and muscles in your hand and barre finger. Therefore they should be practiced incorporating pauses of several seconds (10–20 seconds) so that your hand and fingers can briefly relax.

Barre finger over strings 6, 5, 4, 3 and 2. Practice from position V to IX!

20

21 **The same exercise with the barre finger over all six strings. Practice from position V to IX!**



22 **In the following exercise, the barre finger** is **removed** during the notes with an "×" notehead. A muted tone is generated during which your hand and fingers can relax. The relaxation phases decrease at the beginning of the exercise and increase again towards the end. **Practice from position V to IX!**

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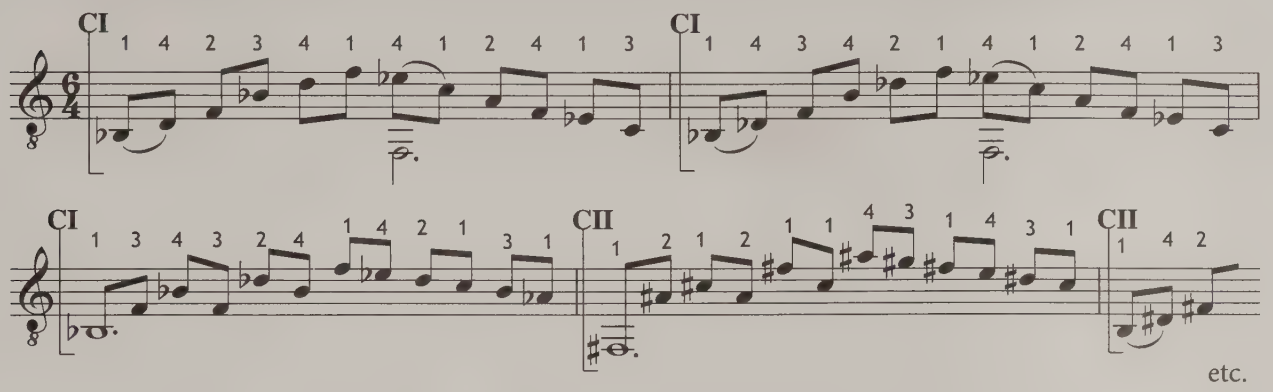
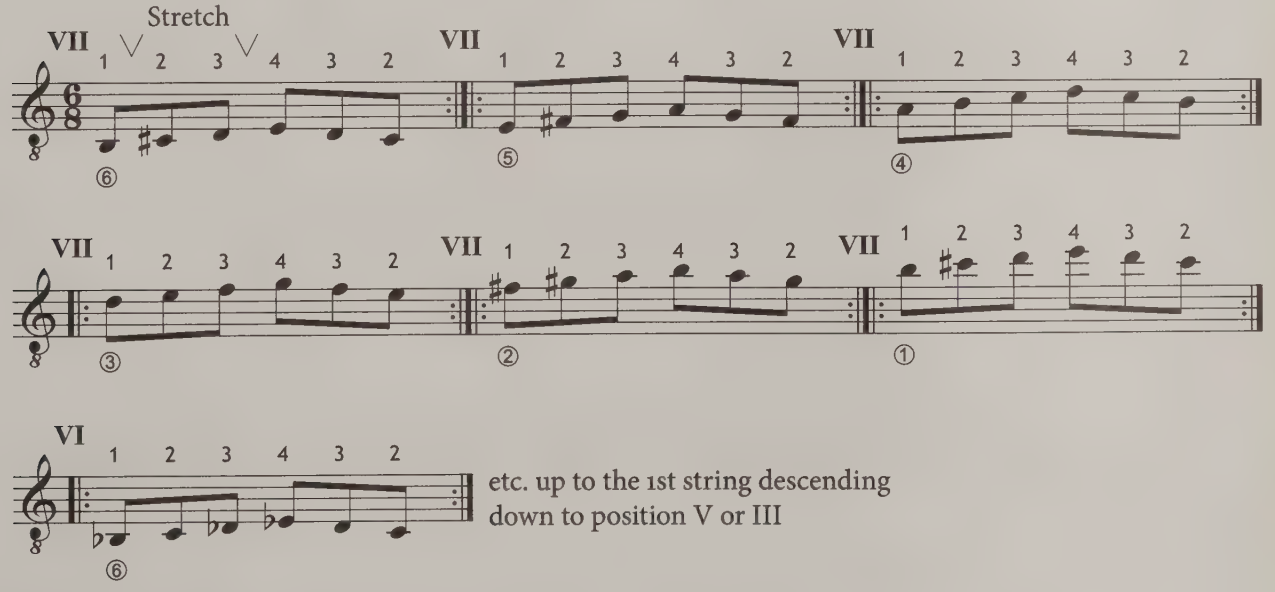
TIP 23 Barre Exercises According to Llobet

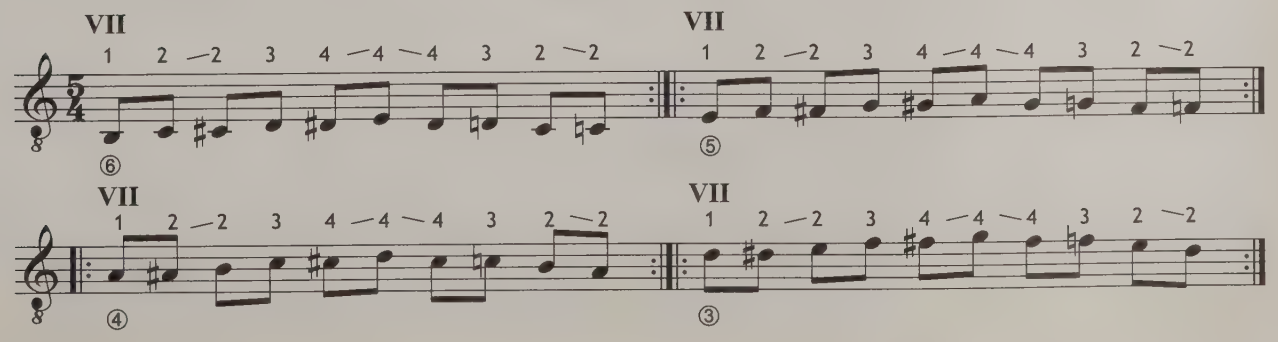
Integrate relaxation pauses into your practicing routine! Barre: 40 seconds, pause: 20 seconds; extend the barre phase to 50 seconds later while reducing the pause to 10 seconds. Repeat the exercise 3 to 5 times!

Stretching Exercises for the LH

Extreme stretching exercises for the LH fingers have to be performed carefully and cautiously. Sufficient demands are put upon the LH fingers already with the independent exercises (p. 179) that include some extreme stretching. In addition, the following exercises train stretching the fingers and should be practiced only for a few minutes daily (or 2 to 3 times a week). Perform all exercises from position VII down to V or even III!

24 Stretching the 1st and 4th fingers:



etc. up to the 1st string descending down to position V or III

25 Stretching the 2nd and 4th fingers:

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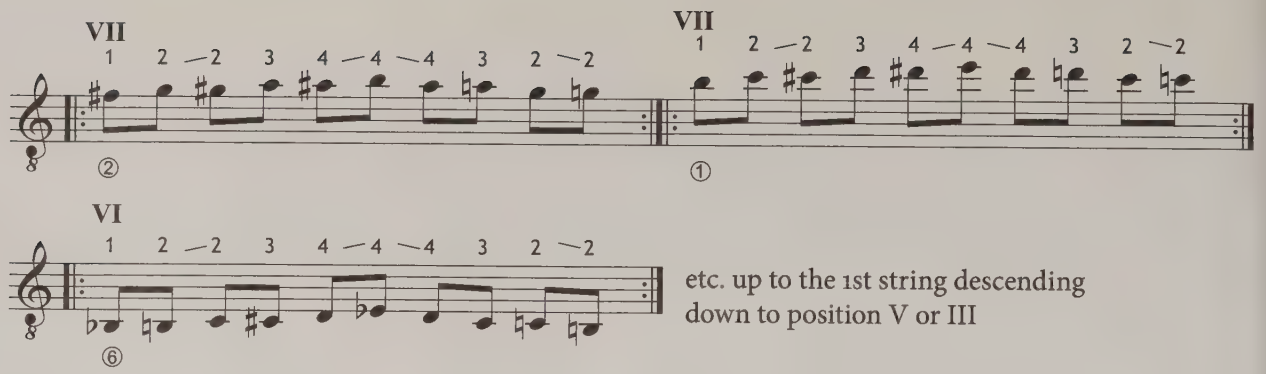
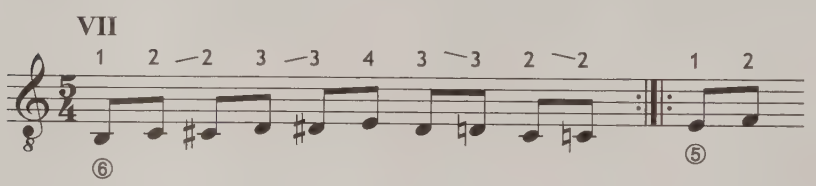
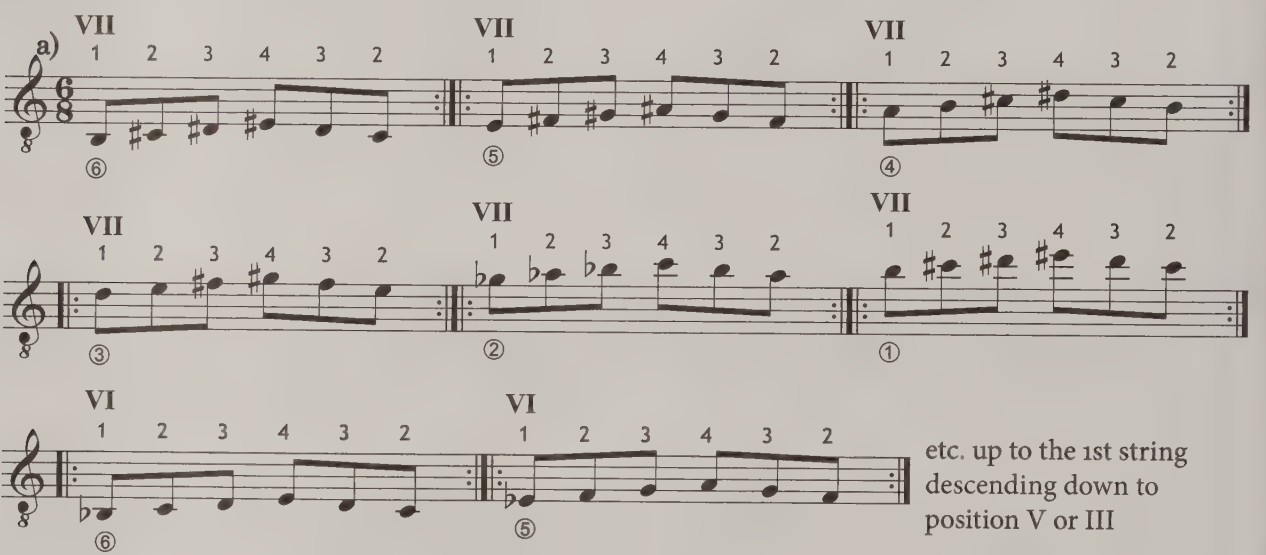


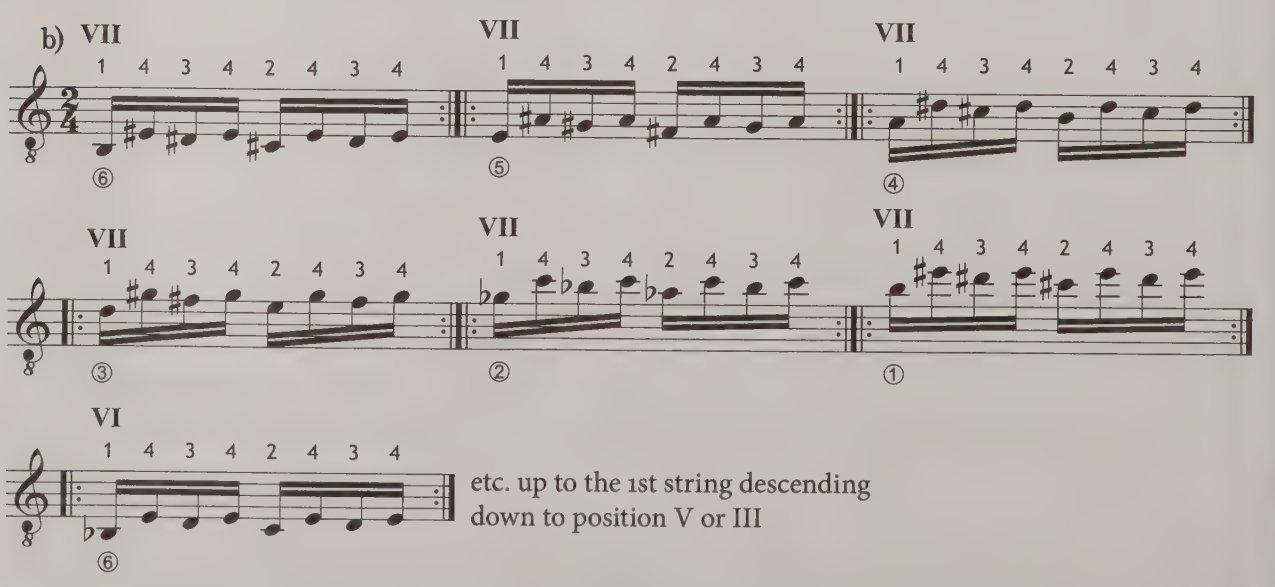
etc. up to the 1st string descending down to position V or III

26 **Stretching the 2nd and 3rd fingers:**



etc. up to the 1st string descending down to position V or III

27 **Streching all fingers in whole tones:**

etc. up to the 1st string descending down to position V or III



etc. up to the 1st string descending down to position V or III

See also "II. Coordination of the Left and Right Hands," Exercise 48, page 113. Here you have to convert the half steps into whole steps while maintaining the same fingering.

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Thirds, Sixths, Octaves and Compound Thirds

Thirds, sixths, octaves and compound thirds have always been part of guitar playing. The corresponding exercises or works which feature passages with thirds, sixths, octaves and compound thirds are vast in number in the original guitar repertoire from the 19th century. As a supplement to performance literature, classical methods for guitar which contain two part scales in all keys in thirds, sixths and octaves are also recommended.

Below you will find a selection of method books, etudes and classical pieces ordered according to the intervals listed above.

Primarily Thirds

1. Fernando Sor: Etude op. 6, No. 6
2. Dionisio Aguado: Scales in Thirds (Study No. 1)
3. Fernando Sor: Etude op. 35, No. 5 (Käppel: The 44 Most Important Etudes, No. 36, AMA Publishing)
4. Dionisio Aguado: Etude 2 (Käppel: The 44 Most Important Etudes, No. 38, AMA Publishing)
5. Mauro Giuliani: Sonata Eroica op. 150
6. Mauro Giuliani: Grande Ouverture op. 61
7. Mauro Giuliani: Guitar Concerto in A Major op. 30, 1st Movement
8. Matteo Carcassi: Guitar Method

Primarily Sixths

1. Fernando Sor: Etude op. 6, No. 10 (Käppel: The 44 Most Important Etudes, No. 42, AMA Publishing)
2. Mauro Giuliani: Etude op. 1, Part II, No. 2
   (Käppel: The 44 Most Important Etudes, No. 32, AMA Publishing)

Primarily Octaves

1. Fernando Sor: Etude op. 6, No. 10
2. Dionisio Aguado: Study 11
3. Giulio Regondi: Introduction et Caprice op. 19 (partially)
4. Francisco Tárrega: Complete Technical Studies, No. 91 (Scheit UE Vienna)

Primarily Compound Thirds

1. Mauro Giuliani: Etude op. 1, Part I, No. 4
   (Käppel: The 44 Most Important Etudes, No. 33, AMA Publishing)
2. Francesco Molino: Prelude in Eb Major
   (Käppel: The 44 Most Important Etudes, No. 35, AMA Publishing)

Octaves and Thirds

1. Mauro Giuliani: Etude op. 48, No. 24
2. Mauro Giuliani: Etude op. 48, No. 16
3. Mauro Giuliani: 6 Rossiniana op. 119 to op. 124

Sixths and Compound Thirds

Giulio Regondi: 2me Air Varié op. 22, 1st Variation

Octaves and Compound Thirds

1. Mauro Giuliani: Etude op. 48, No. 8
   (Käppel: The 44 Most Important Etudes, No. 21, AMA Publishing)
2. Mauro Giuliani: Etude op. 48, No. 13

Thirds, Sixths and Compound Thirds

1. Fernando Sor: Etude op. 60, No. 23
   (Käppel: The 44 Most Important Etudes, No. 29, AMA Publishing)
2. Napoléon Coste: Etude op. 38, No. 22
   (Käppel: The 44 Most Important Etudes, No. 39, AMA Publishing)

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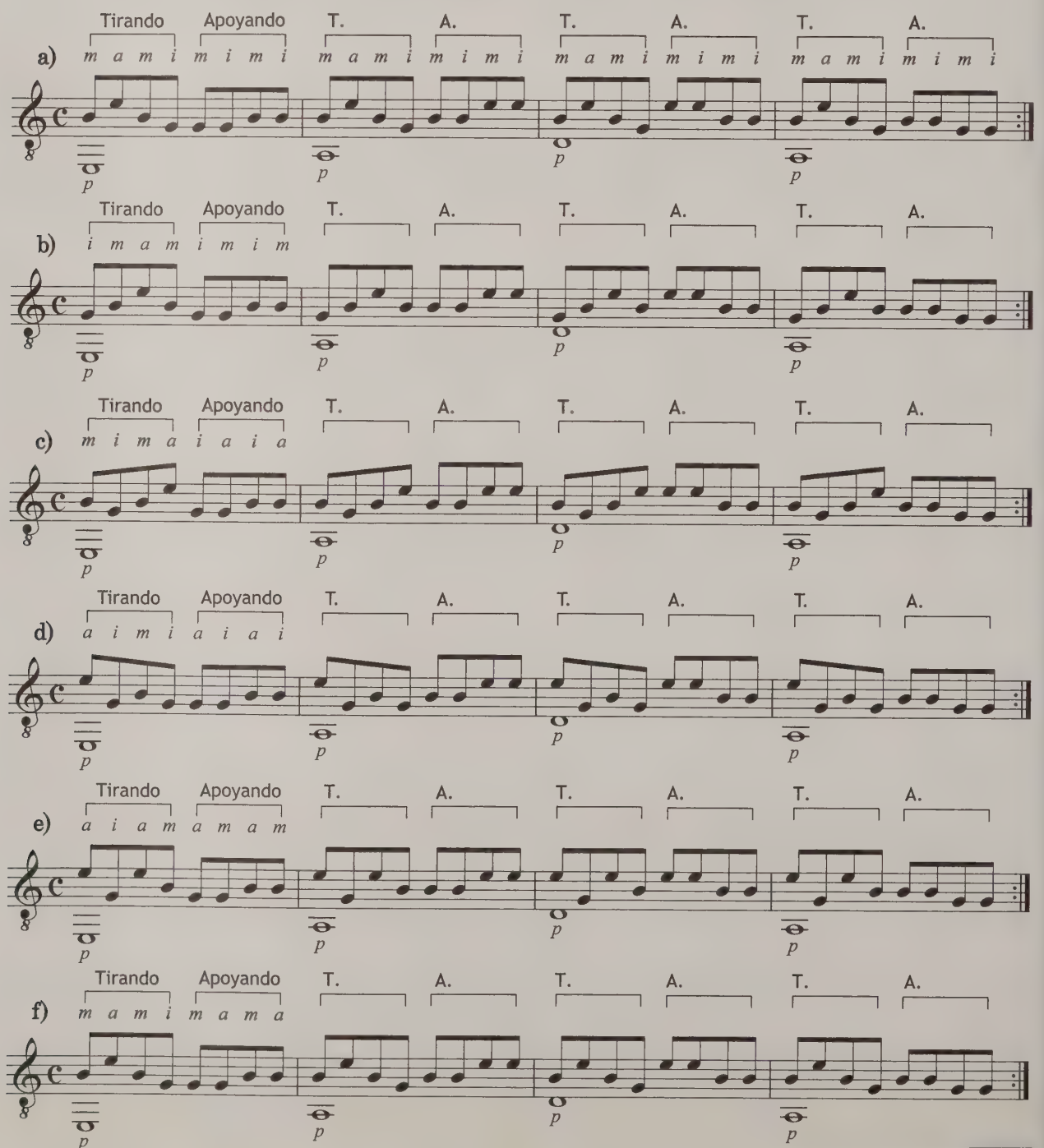
VIII. Additional Technical Exercises for the Right Hand

Tirando and Apoyando Exercises

The varied tonal colors that you can produce with the tirando and apoyando strokes allow you to make many works more musically interesting. The following exercises will help you to learn to switch from tirando to apoyando and back again with the least effort possible. After the apoyando attack, it is only your fingertips that are allowed to touch the adjacent string in a kind of half apoyando. The right hand and wrist should move as little as possible when switching between the strokes.
Tirando and apoyando are abbreviated by "T." and "A." during the course of the exercise.

1 Tirando Arpeggios Alternating with Apoyando on Two Strings



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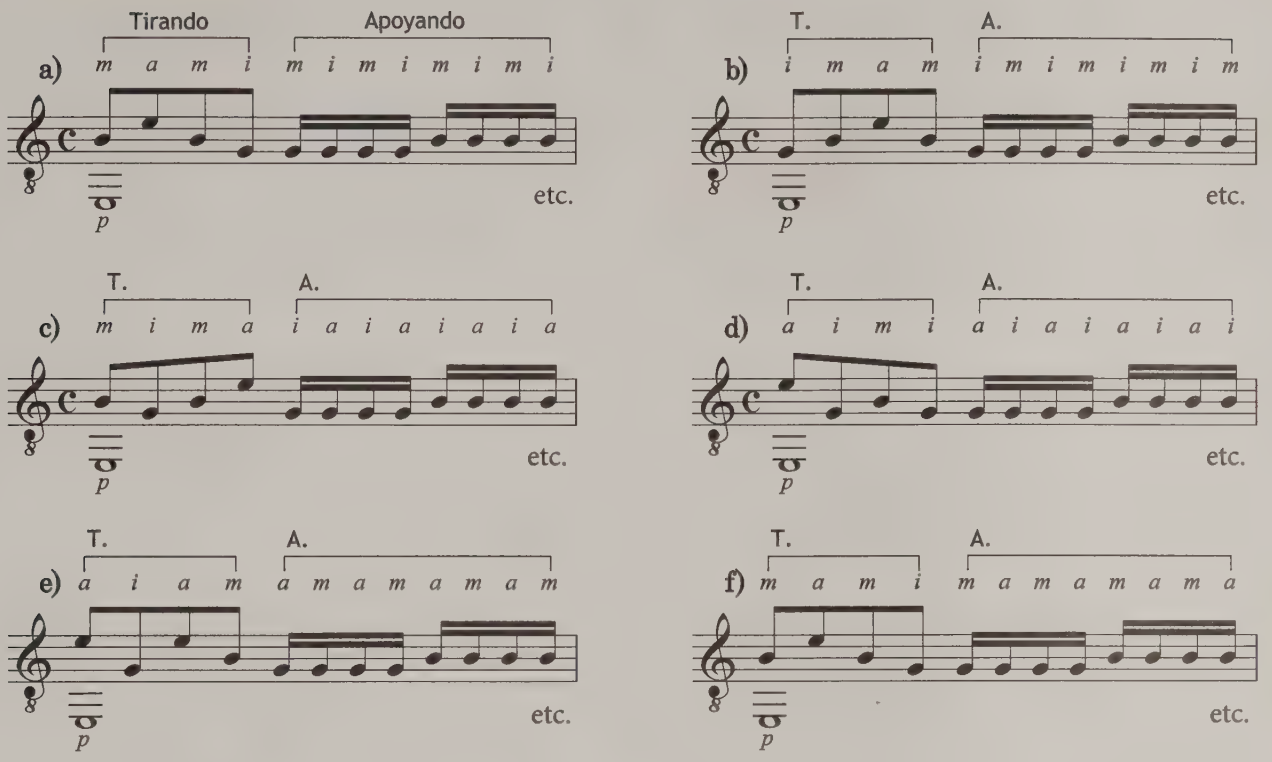
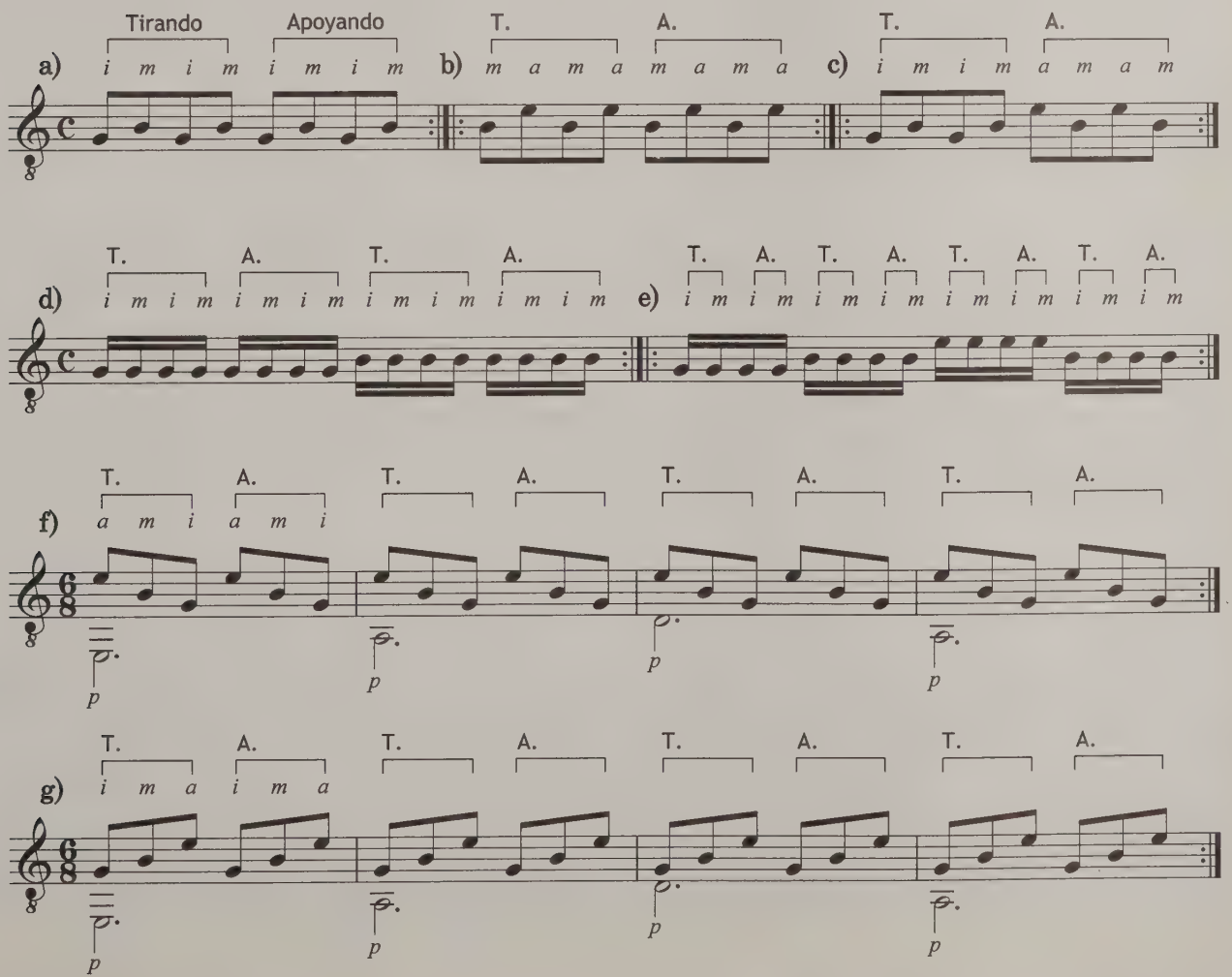
2 Tirando Arpeggios Alternating with Repeated Notes in Apoyando

3 Alternating Tirando and Apoyando



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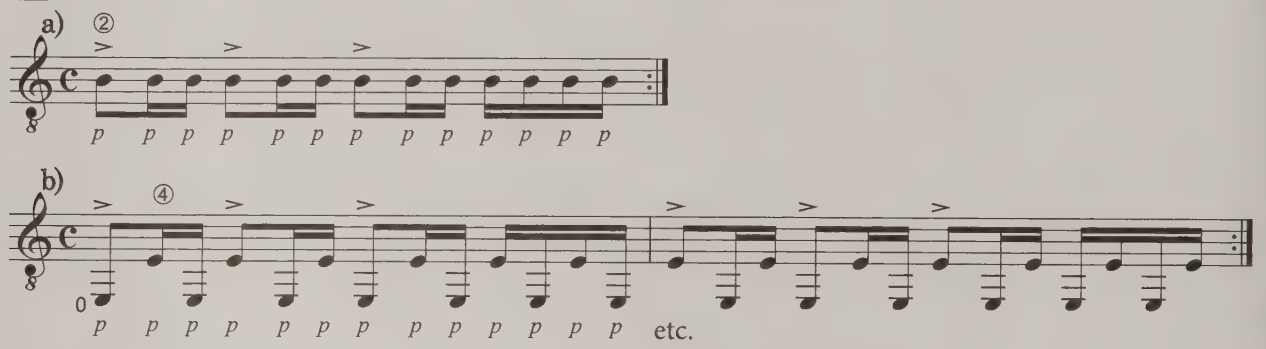
Thumb Exercises

The thumb of your right hand is used in many different ways. It plays individual solo parts while employing different tonal colors, supplies bass and harmony parts, performs diverse RH patterns together with the other fingers (see chapter "I. Arpeggios," p. 48; you'll also find two part playing with a-m-i there) and is also used for the counterpoint voice in two part polyphonic music. The following exercises will help to improve your thumb's speed and flexibility.
Further thumb exercises can be found in chapter "VI. Flamenco Techniques" found on page 171.

In order to keep your hand and wrist still when playing with your thumb, the fingers a-m-i are placed on the 1st string in exercises 4 to 7.

4 Perform on all strings.

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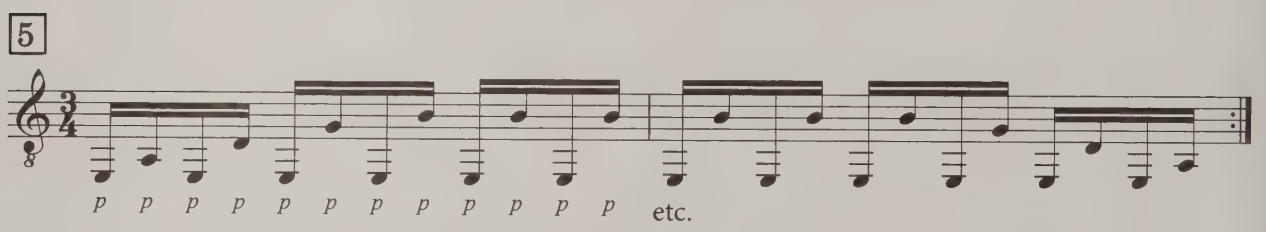

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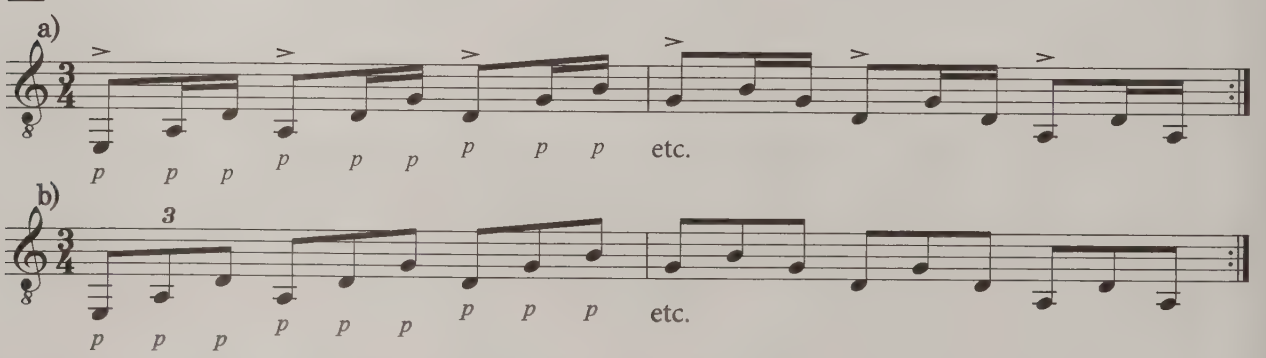
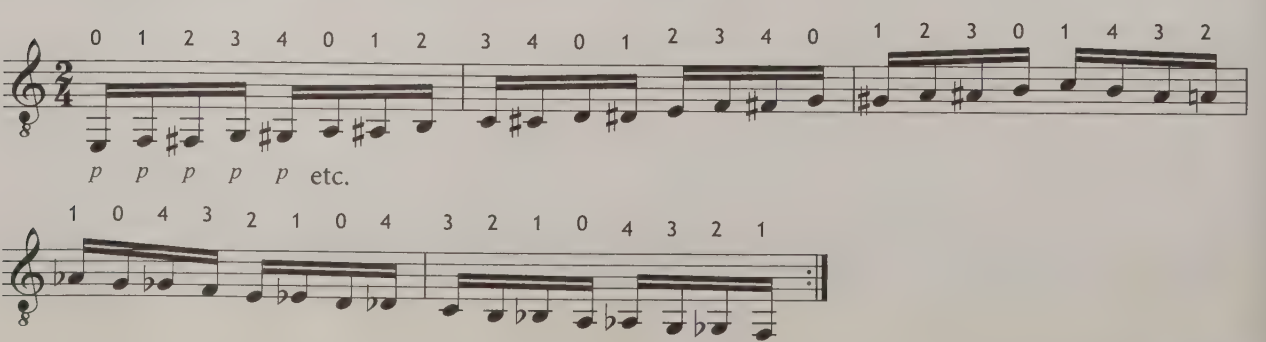


7 **Chromatic Scales from the 6th to the 2nd String**



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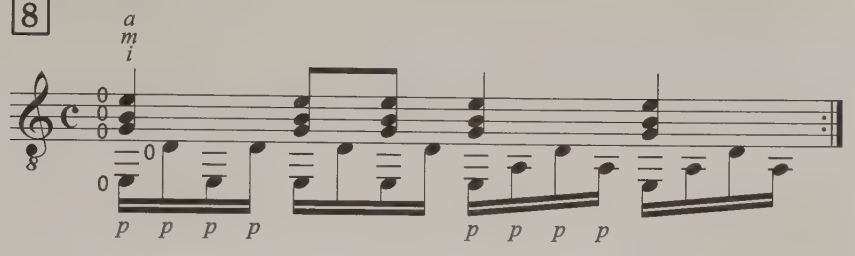
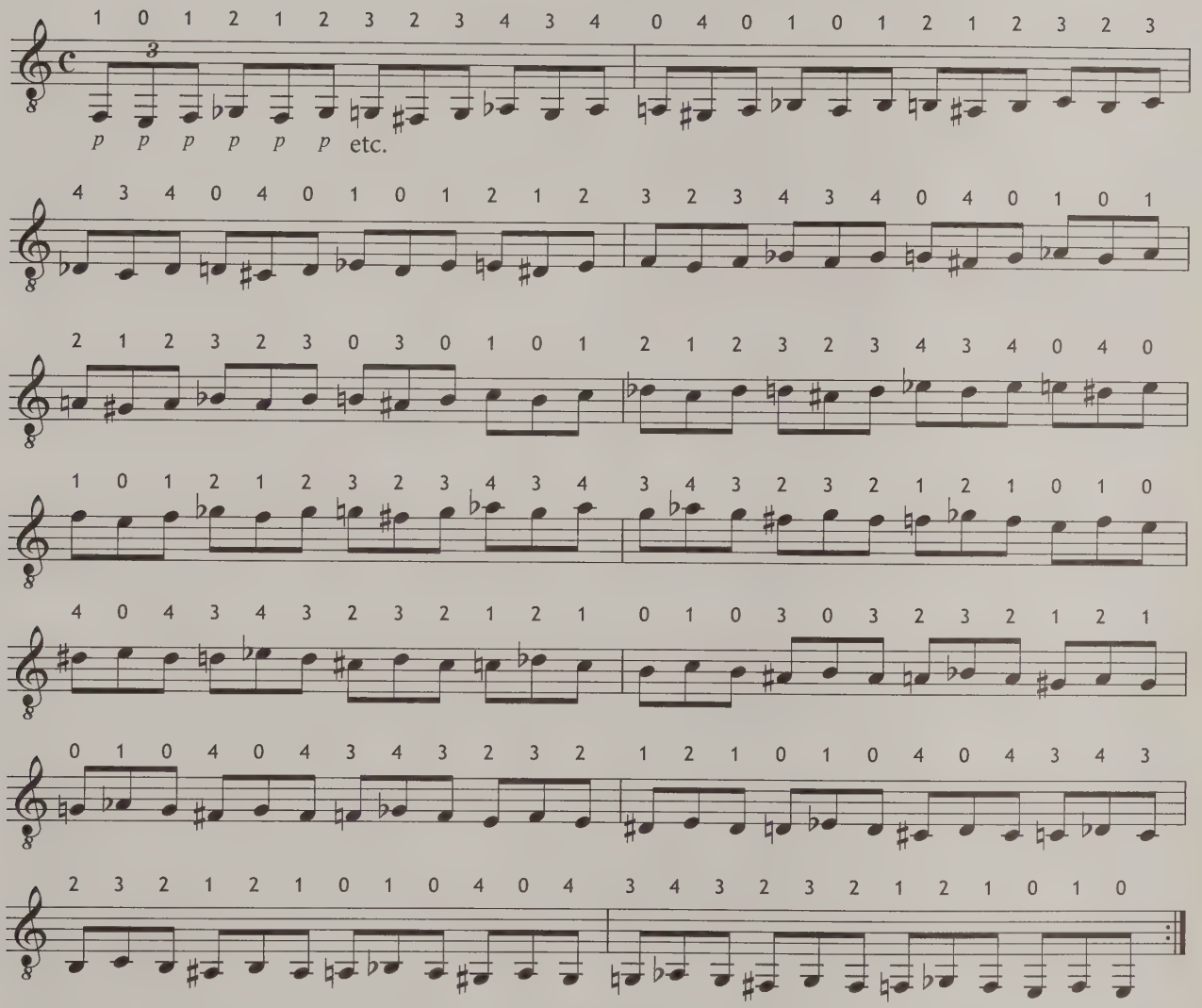
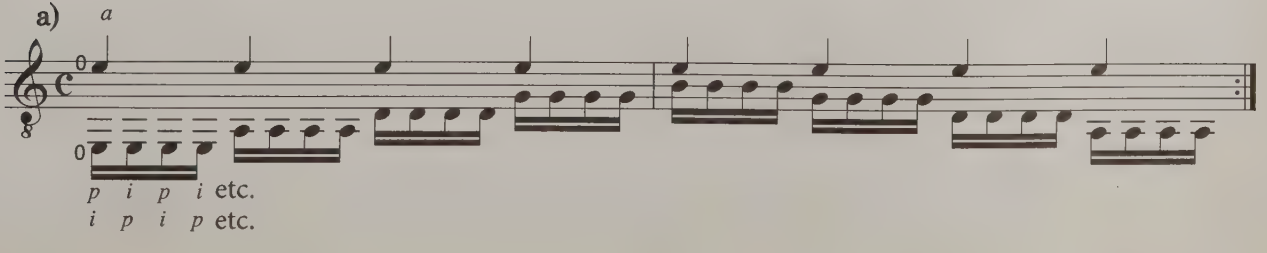


9 Chromatic Exercise in Triplets on All Strings Without Planting a-m-i



10 Two Parts Played Using p-i on the Bass Strings and a on the e' String



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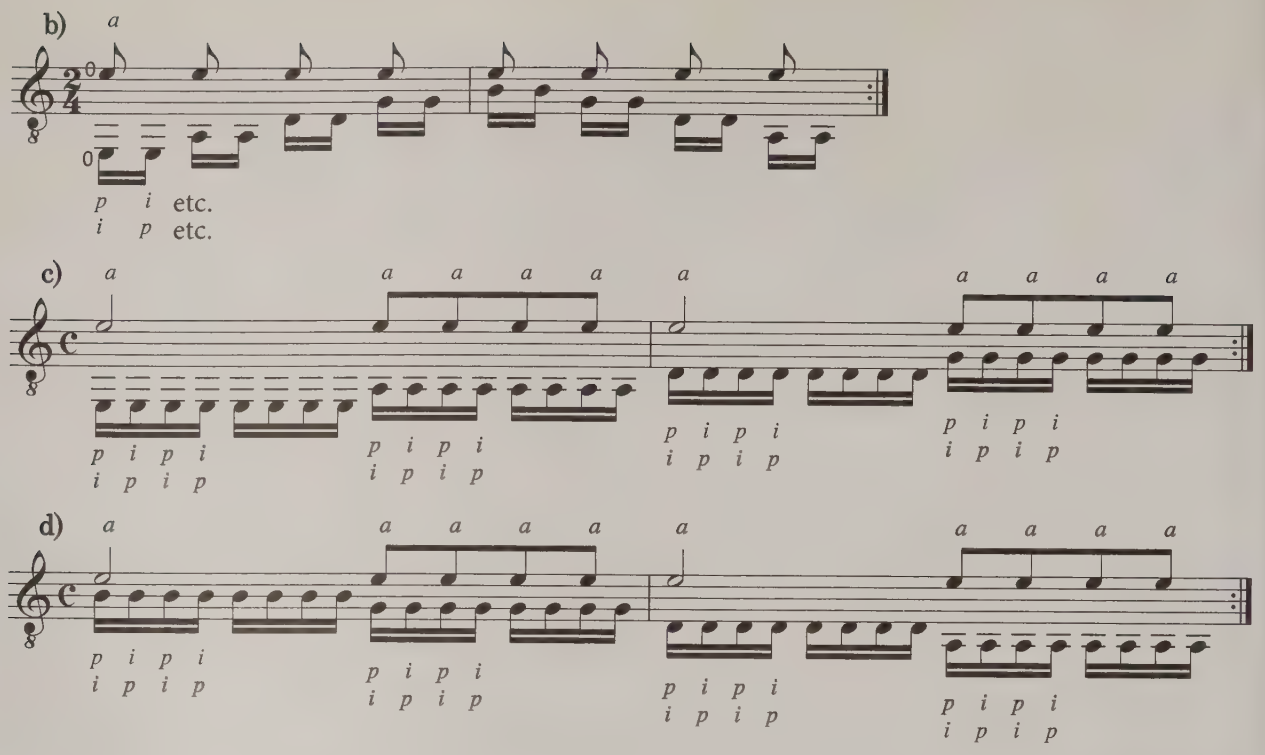
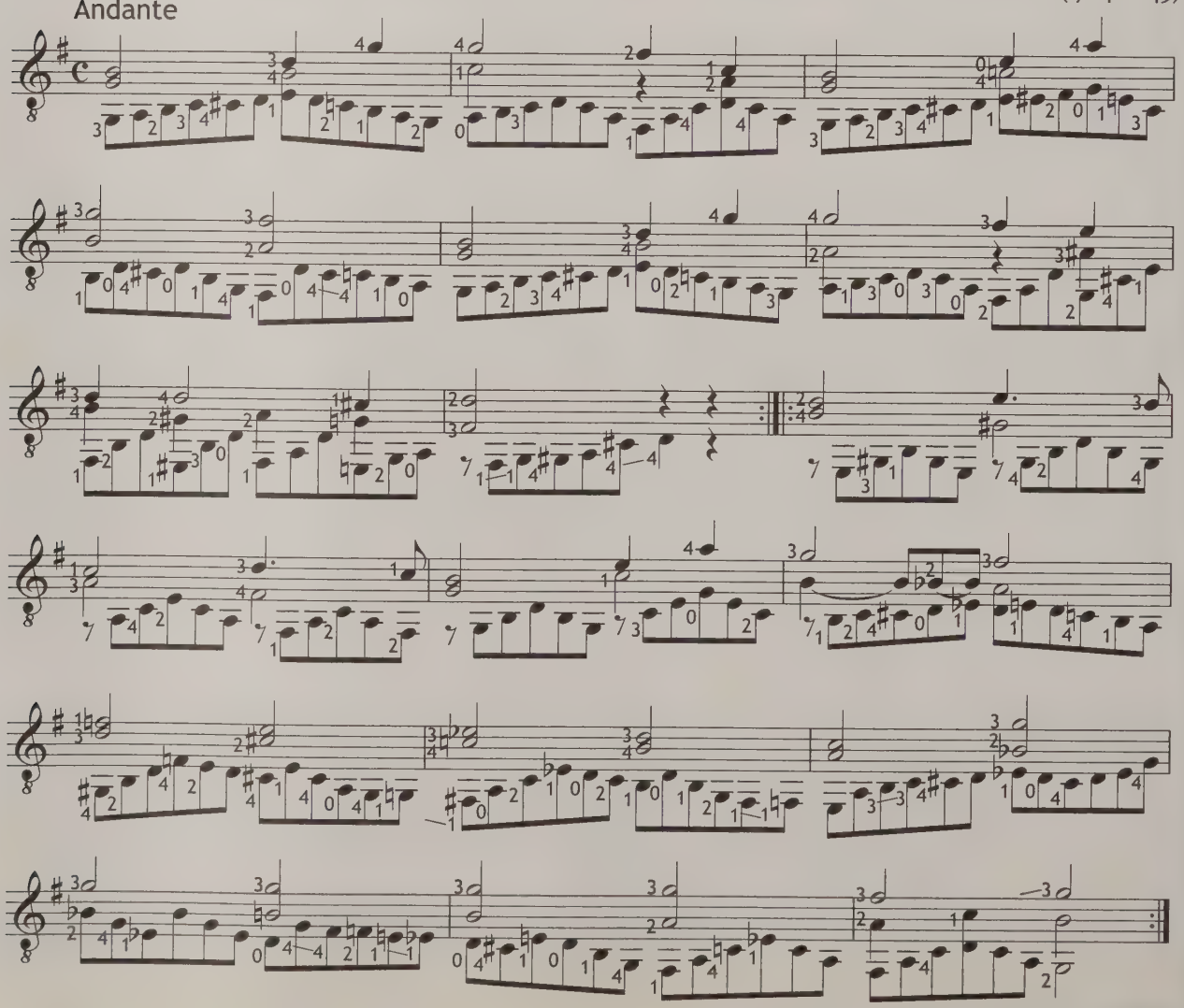


11 This **Aguado study** is excellently suited as a thumb exercise. All LH slurs that have been indicated by Aguado are left out on purpose.

Dionisio Aguado
(1784–1849)

Andante



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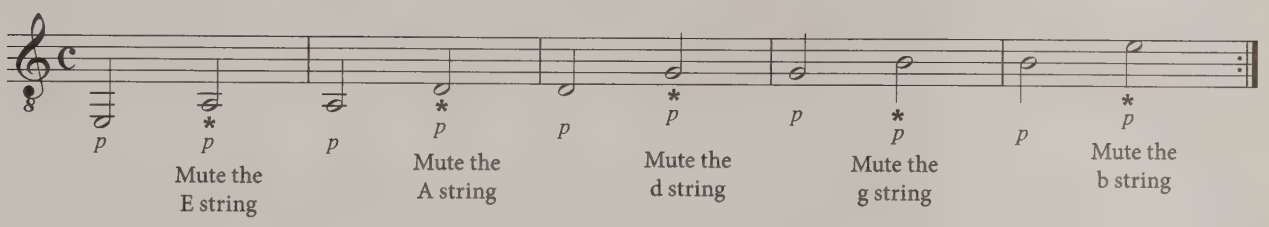
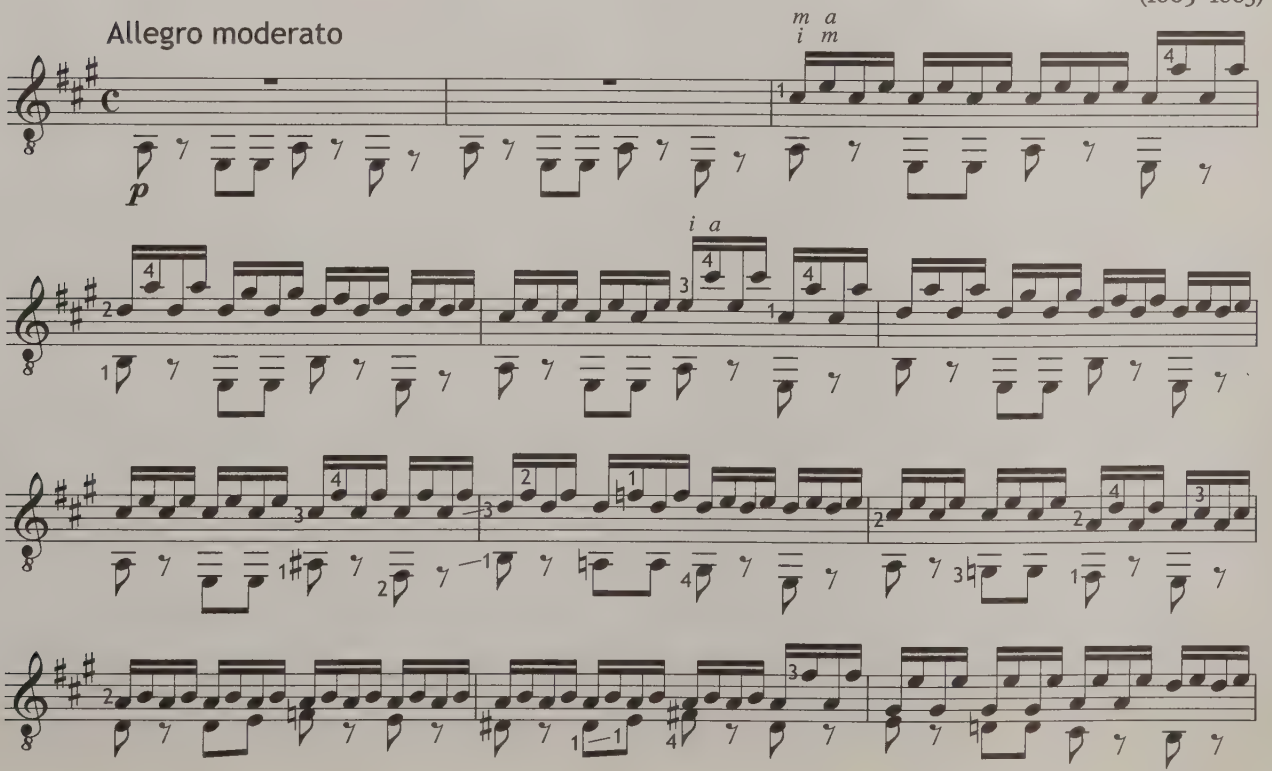
Simultaneous Attacking and Muting with the Thumb

This technique is absolutely essential for every guitarist as it is just as commonly found in early music as it is in modern guitar literature. It allows you to stop non-harmonic bass notes immediately because, if you mute the bass note by touching the lower string after the attack, the non-harmonic bass note still sounds and is stopped too late. It is only a lower string that can be muted in this fashion. With your wrist slightly lowered, your thumb plays a (higher) bass string and mutes the lower one simultaneously. The lower joint of the thumb bends a little bit as seen in the photo:

12



TIP 13 The following **Coste study op. 38, No. 23** demands several different techniques in both the left and right hands. It appears at this point in the book as it also incorporates the muting technique explained above. Overall it's one of the best and most effective etudes you can practice. The fluency and endurance of your right hand as well as quick changes in your left are trained here.

Napoléon Coste
(1805–1883)

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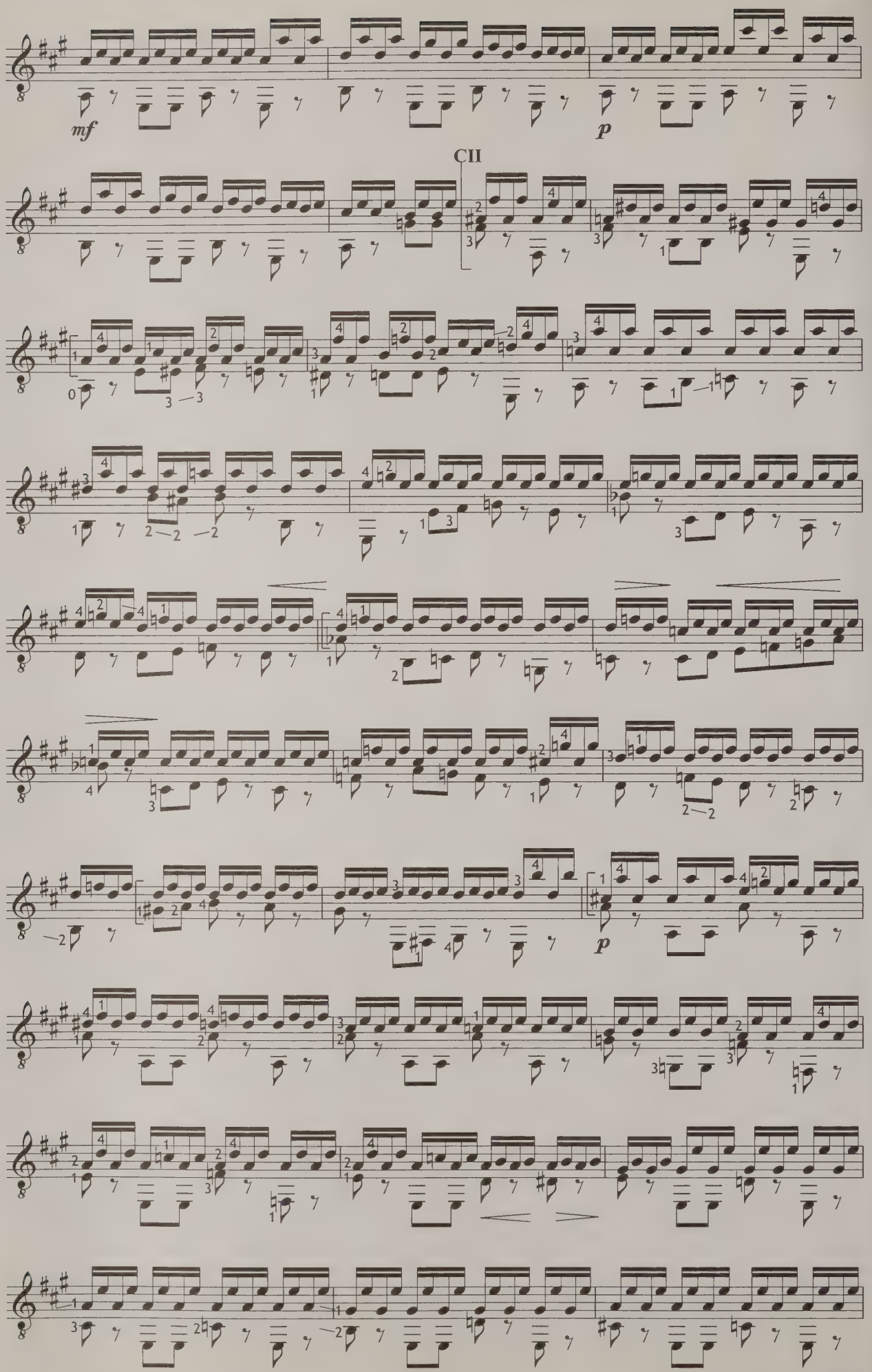

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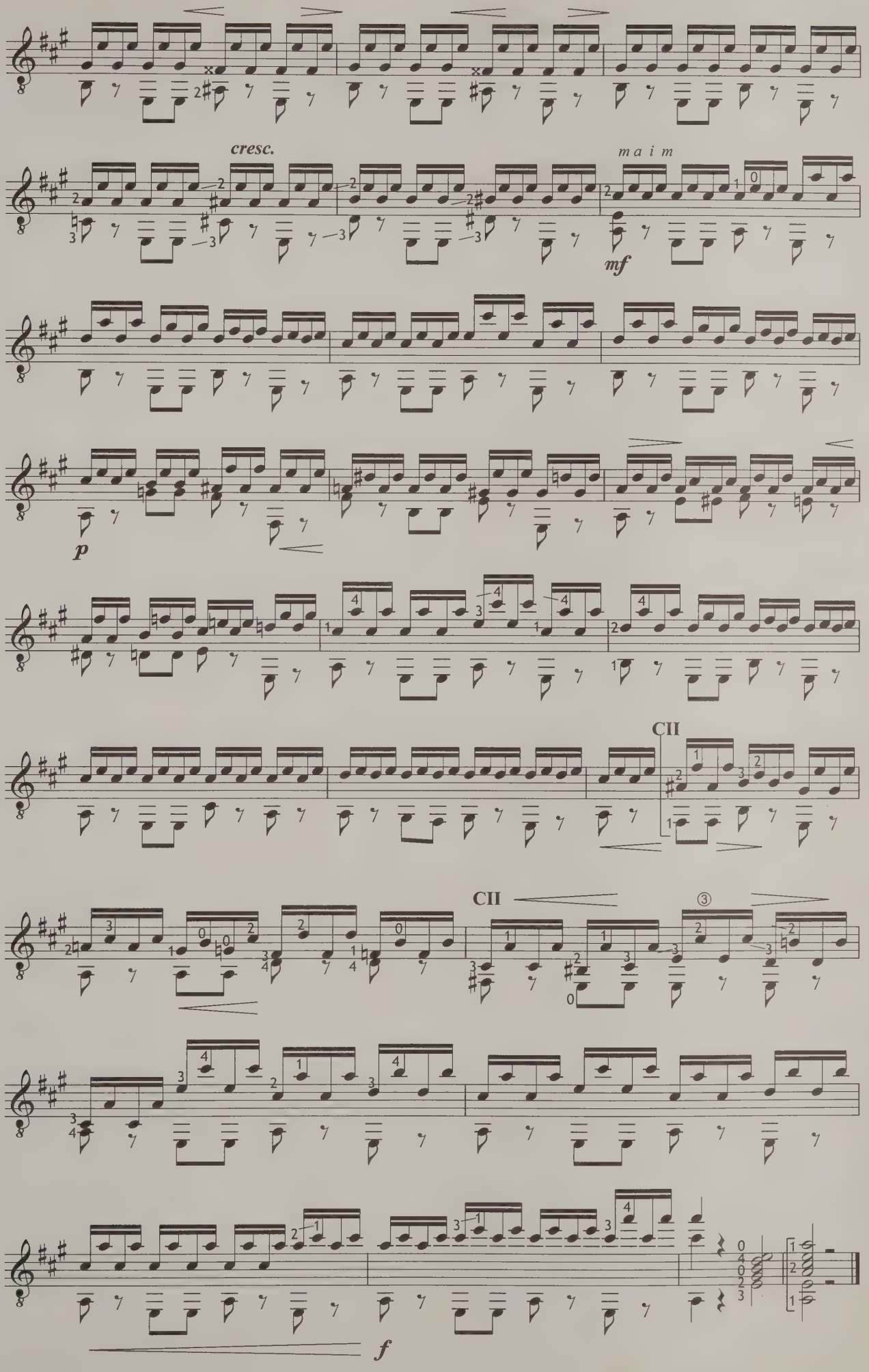

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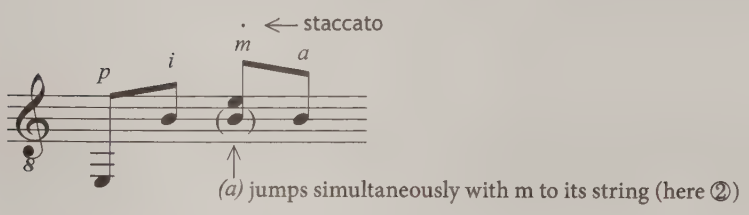
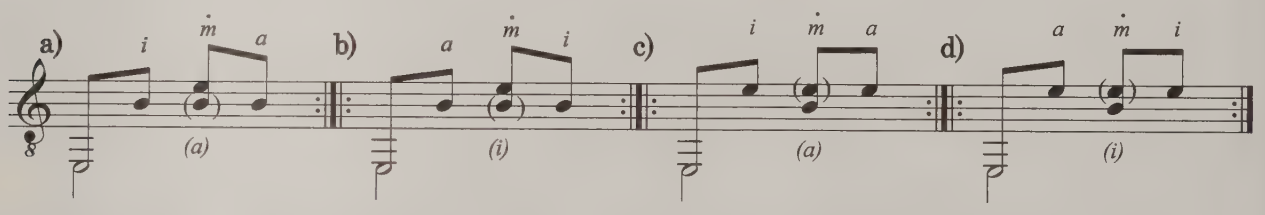
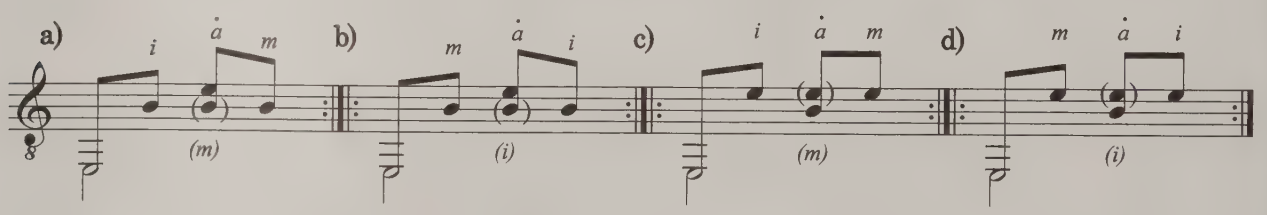
Exercises to Help Avoid Nail Noise

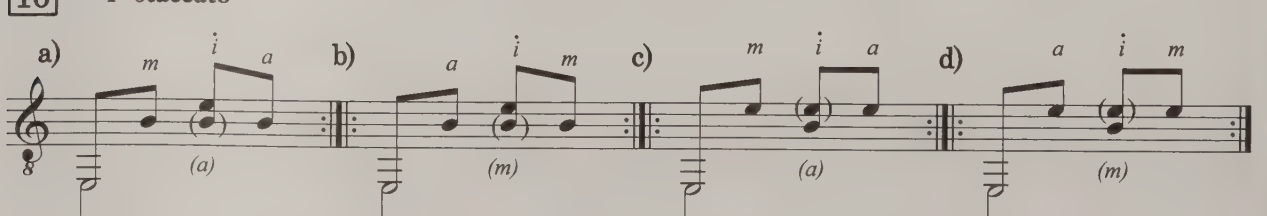
It is often the case that a normal tirando or apoyando stroke is accompanied by nail noise (clicking) which is clearly audible above the normal guitar tone and unpleasant to listen to. Such noise is created when your nails are not perfectly shaped or, more frequently, by a less than perfect attack.
In the following exercises, a single finger jumps back to the string that it has just played so that a staccato note is produced. At the same time and with a strong impulse, the following finger is planted on the adjacent string – in preparation for its attack that is to follow. This should be performed as silently as possible. It is the fingertip of the following finger that should "land" on the string to minimize the nail noise.

In the example **p-i-m-a**, the middle finger **m** takes the ring finger **a** along. This is represented by the note found in parentheses.



14 **"m" staccato**

15 **"a" staccato**



16 **"i" staccato**

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Pizzicato Exercises

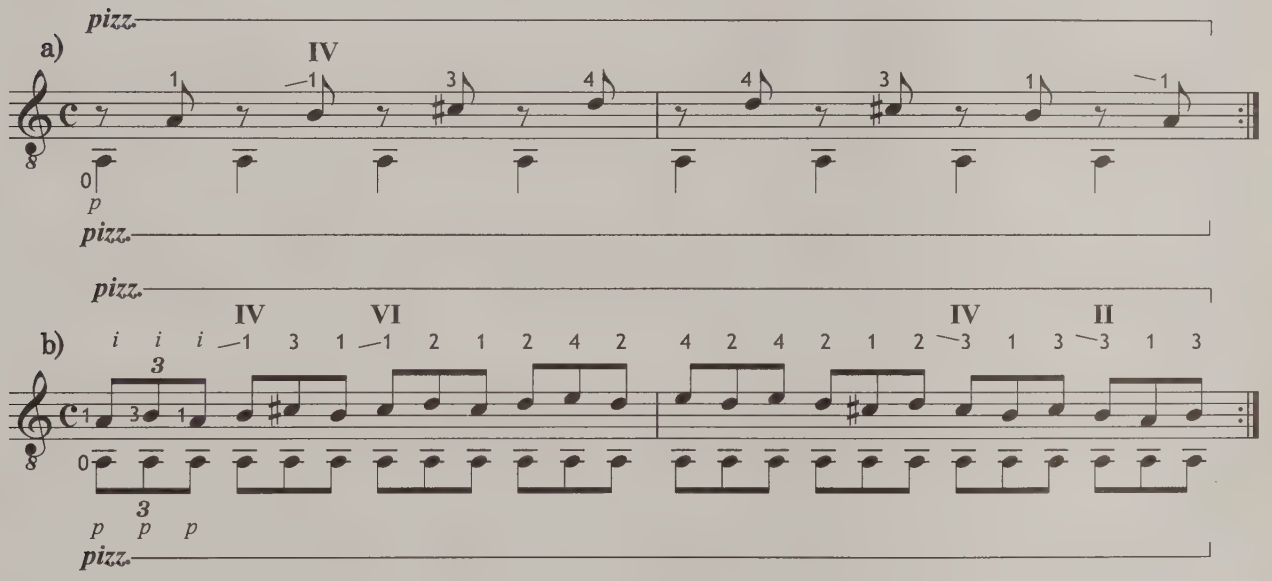
The pizzicato effect that originates from string instruments is achieved on the guitar by placing the heel of your hand across all the strings about 1 to 2 centimeters away from the bridge. In order for the pizzicato effect to sound the same on all strings, the heel of your hand has to be equidistant from the bridge on all strings. The pinky on your right hand can serve as a guide as it should be stretched as much as possible and held parallel to the bridge.

The most common form of pizzicato is the thumb pizzicato. The thumb strikes very flat with its fingertip. A short, muted tone is produced which, according to your musical needs, can be lengthened by briefly lifting the heel of your hand. Equally, by increasing or decreasing the pressure of the heel of your hand on the strings, you can also change the tonal color.

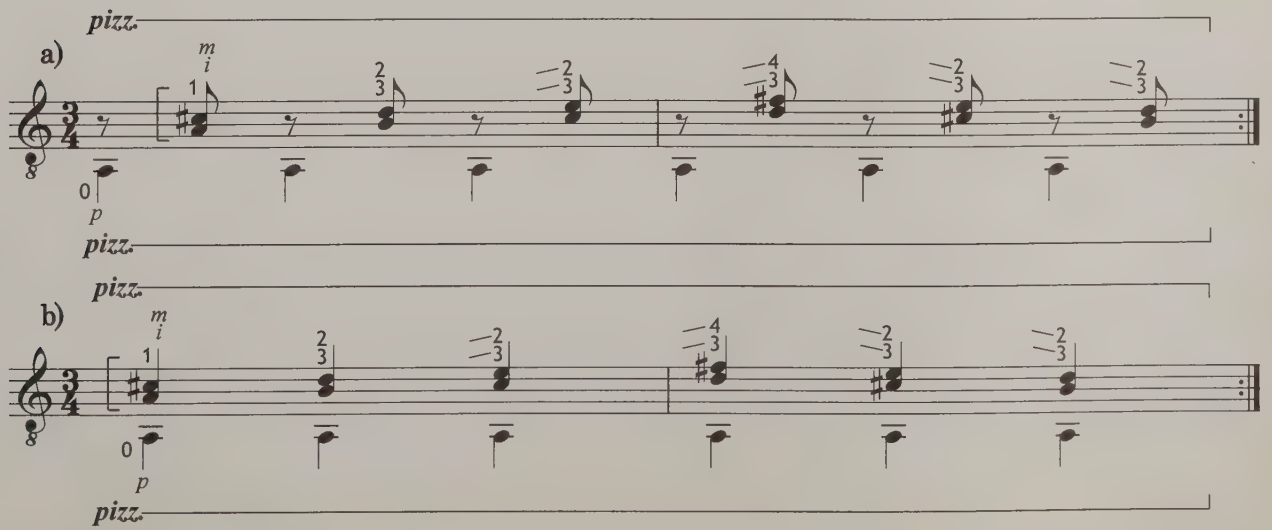
The thumb exercises Nos. 4–9 on page 192 are also suited as pizzicato exercises. In this case, the fingers a-m-i cannot be allowed to rest on the 1st string.

17 Pizzicato Exercise with Thumb and Index Finger

In two-part pizzicato – notes played simultaneously or one after the other – the index finger also strikes flat with the right side of the fingertip. Depending on the angle of finger, the right side of the nail (right ramp, see page 38) is also in use.



18 Pizzicato Exercise with Thumb, Index and Middle Fingers

The index and middle fingers play flat with the right side of the fingertip. Here also, depending on the angle of finger, the right side of the fingernail might be involved in the attack.

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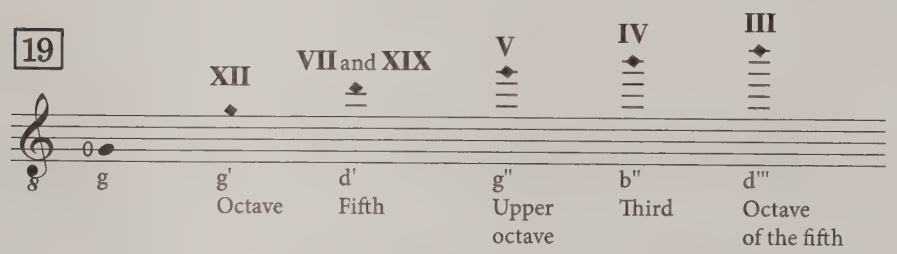
Harmonics Exercises

Both natural and artificial harmonics employ the overtone series. Natural harmonics are produced by lightly touching a fret bar with a single finger of your left hand. After a finger of your right hand has attacked, the left hand finger which is touching the string has to be quickly removed. Now the string is free to vibrate and the harmonic tone sounds. Harmonics are always notated with angular notepads.

Natural Harmonics

Here are the most common ones, indicated on the g string, which can of course be transferred to the other remaining strings:

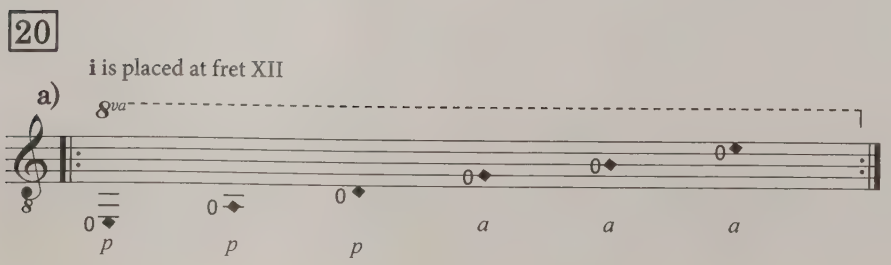
Octave	=	Fret XII
Fifth above the octave	=	Frets VII and XIX
Upper octave	=	Fret V (and approximately over the soundhole)
Third	=	Fret IV (and at the beginning of the soundhole)
Octave of the fifth	=	Fret III (a little bit in front of the fret bar and about 1 cm from the soundhole)



Important! The upper octave, third and octave of the fifth harmonic tones can also be found beyond fret XIX (off the fingerboard) in front of and above the soundhole in the direction of the bridge. These notes are often employed in contemporary music – as a guide you should indicate them on your string with a marker.

Artificial Harmonics

These are produced with the help of the index finger of your right hand which, in the span of an octave, touches the desired fret bar. Behind the widely stretched index finger, **the thumb plays the three bass strings, the ring finger the three treble strings**.
As the nail of the ring finger can cause a scratchy sound on the bass strings, the harmonics on the bass strings should always be played with the thumb.
For easy legibility, they are most often notated an octave lower than they actually sound. The "8" (the octave sign above the notes) lets you know that artificial harmonics are required.
In addition to halving (octave) the string, it can also be divided into three parts. This causes the fifth above the octave to sound and is a rare form of artificial harmonics.
You should practice this special right hand technique with natural harmonics first!



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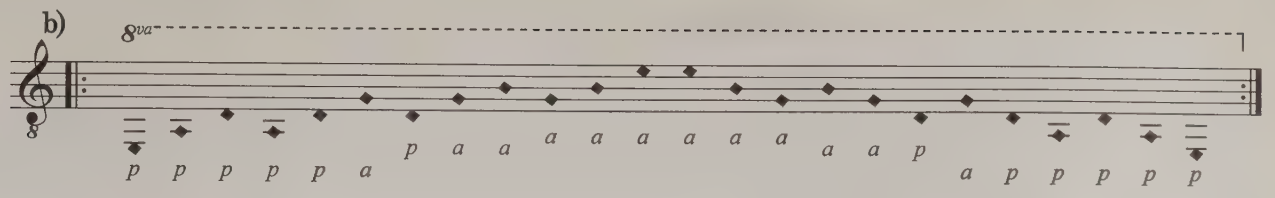

Different Artificial Harmonics Exercises

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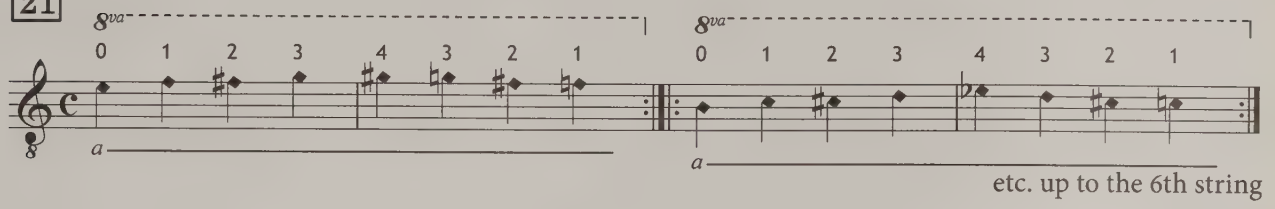
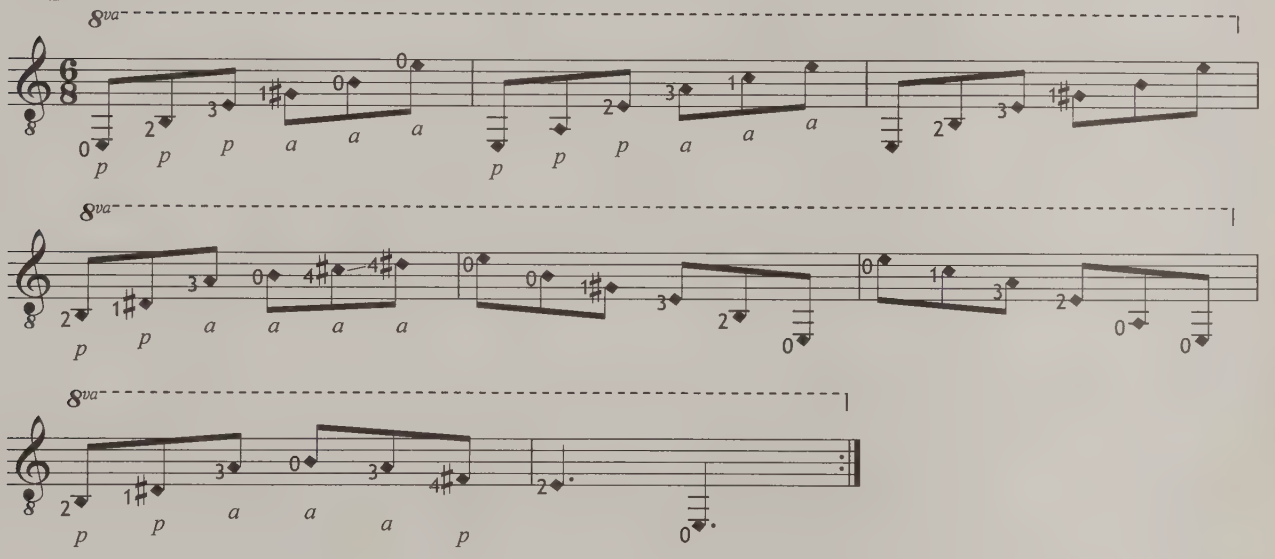
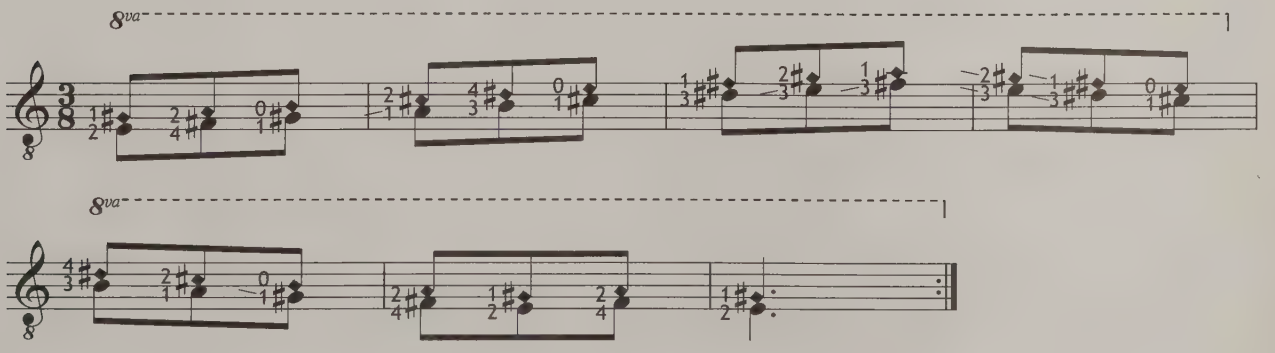

etc. up to the 6th string

22

23 Two-Part Exercise with a Harmonics Upper Voice



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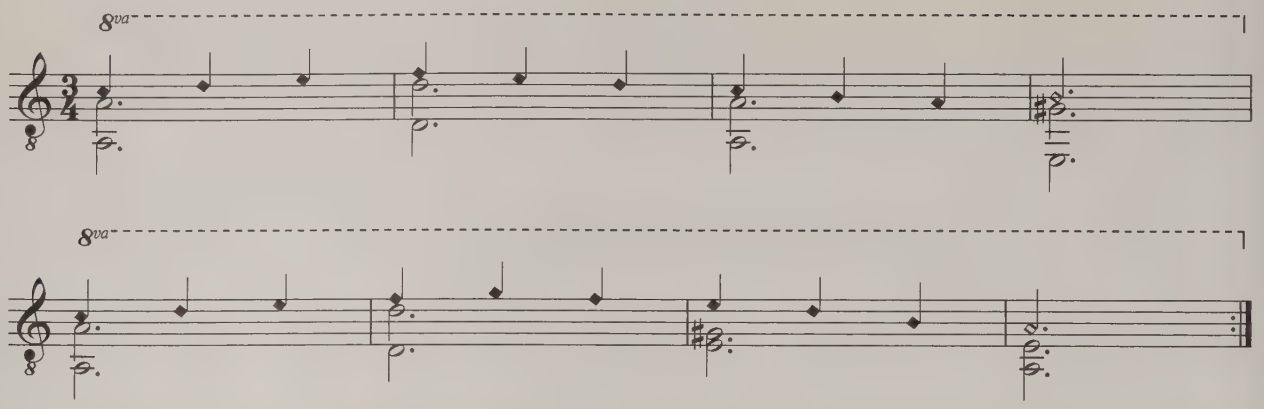
24 Three-Part Exercise with a Harmonics Upper Voice



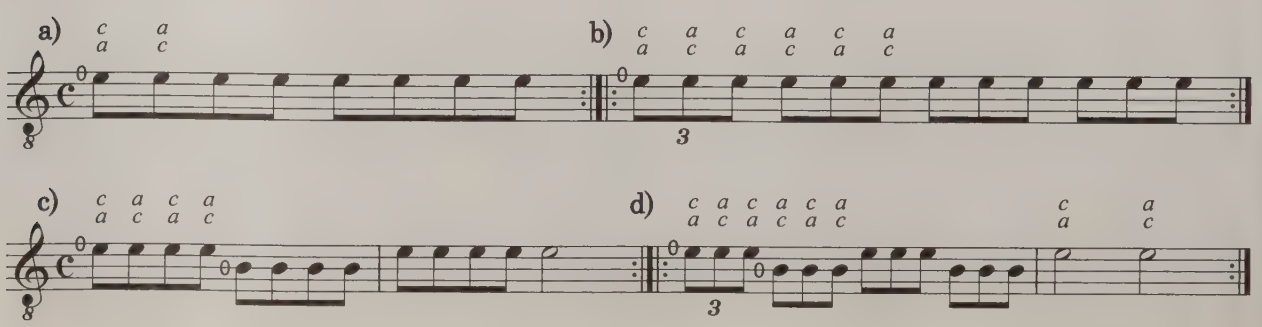
The best harmonics exercises are contained in original works or arrangements found in the established guitar repertoire. Here a brief sampling:

Fernando Sor:	**Six Airs Choisis op. 19, No. 4 (Nat. Harm.)**
	Malbrough Variations, Finale Lento (Nat. Harm.)
	Etude op. 29, No. 21 (Nat. Harm.)
Francisco Tárrega:	**Alborada (Nat. Harm.)**
Niccolo Paganini:	**Caprice No. 24, 3rd Variation (Art. Harm.)**
	Heitor Villa-Lobos: Prelude No. 4 (Nat. Harm.)
	Etude No. 1, End (Nat. Harm.)

In many classic works by Sor and Giuliani (among others), you will find short harmonics passages; also in the transcriptions of works by Albéniz arranged by Segovia and Tárrega.

Alternating Exercises with the Pinky and i-m-a

In classical guitar technique, the pinky **c** plays an active role only in rasgueado passages. If it is used as a normal attacking finger however, it can contribute to allowing the playing fingers **i-m-a** time to relax. That's why alternating exercises with **i-m-a** and the pinky are very helpful, also when practicing playing fast with your right hand. Even after practicing just a few minutes with your ring finger and pinky for example, the alternate **m-i** will immediately seem easier.
Prerequisite for an attack with c is a perfectly shaped and polished pinky nail. Due to the different lengths of player's pinkies and **a-m-i**, the motion is more difficult than with ordinary finger combinations. In order to avoid crossing strings, it is also recommended to perform the exercises on the 1st and 2nd strings.

25 Exercises for Alternate a and c

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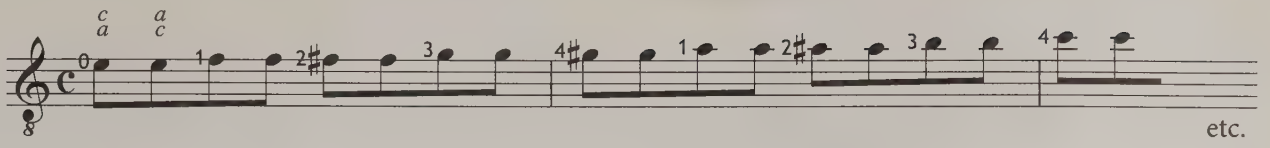
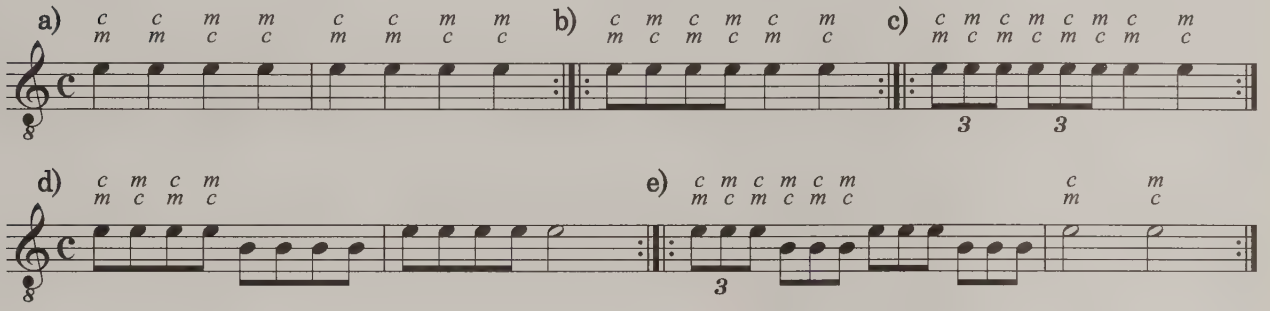
26 Chromatic Scale on the 1st String



27 Exercises for Alternate m and c

As **m** and **c** aren't adjacent fingers, the ring finger can somewhat interfere with the movement of **m** and **c**.

Comprehensive practice material appropriate for alternation exercises incorporating your pinky can be found in the following chapters:

II. Coordination of the Left and Right Hands:
Speed Exercises 1 to 6, p. 91
Synchronization of Your Left and Right Hands
Exercises 20 to 31, p.98
Exercises 40 to 48, p.107

III. Scales in All Keys:
Preparatory Studies for Scales and Runs, Exercises 1 to 3, p.115
Five Short Exercises for Major and Minor Scales, Exercises 5 to 9, p.124

Alternating Exercises with Fixed RH Fingers

As in the arpeggio practicing methods (see "Practicing with Fixed Fingers," p. 52) and described as permanent fixation there, the fixed finger applies light pressure to the string during all alternating patterns and simply remains there. The movements of the fingers are now more difficult but their muscular development is optimal. Even after practicing with fixed fingers for just a few minutes, the alternating attacks without fixed fingers can be performed more easily.
The thumb can also (but doesn't have to) remain fixed on the 6th string. It's additional fixed position has little effect on the freedom of movement of the other fingers.

Please note: In most of the exercises, the chromatic scale in thirds (see p. 53) can be used instead of open strings.

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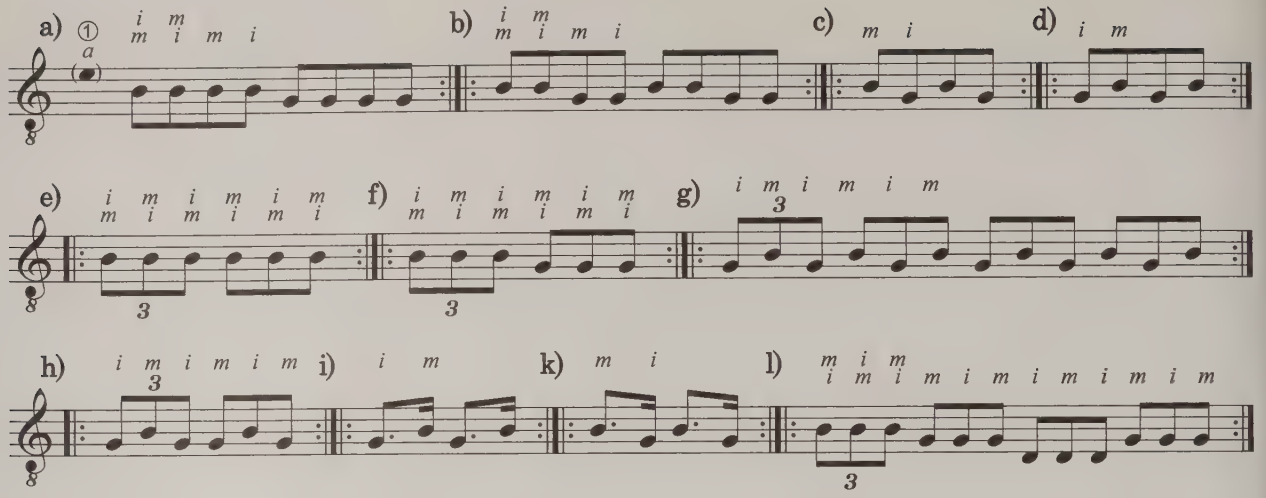
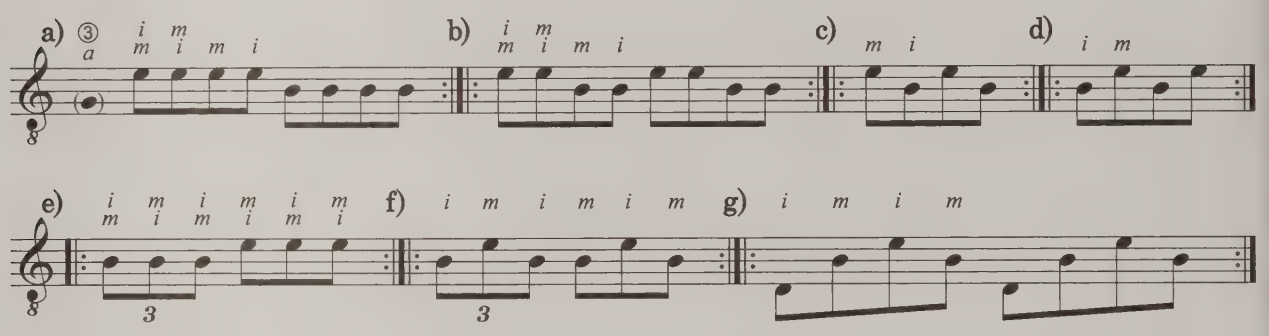
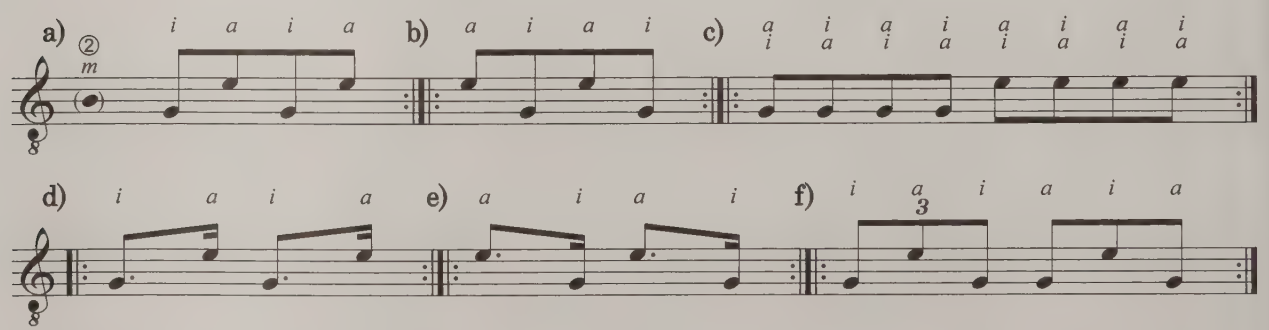
28 Alternate m-i Exercises, a Fixed on the 1st String



29 Alternate m-i Exercises, a Fixed on the 3rd String

30 Alternate m-i Exercises, m Fixed on the 2nd String



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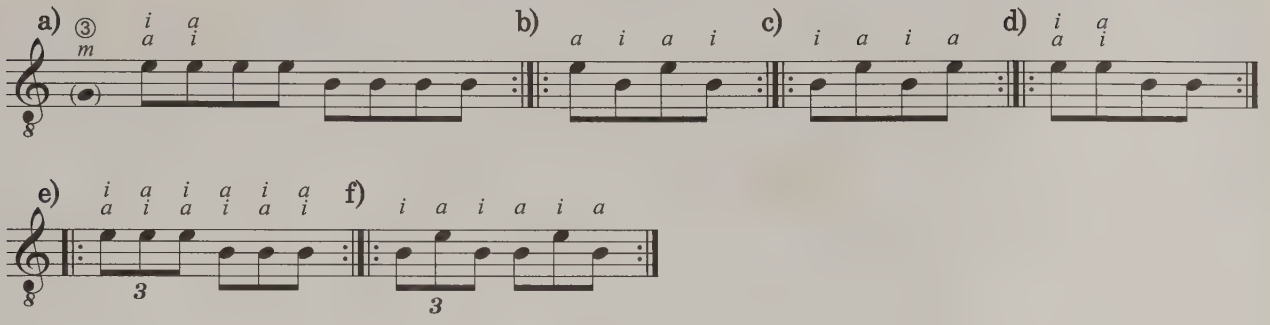
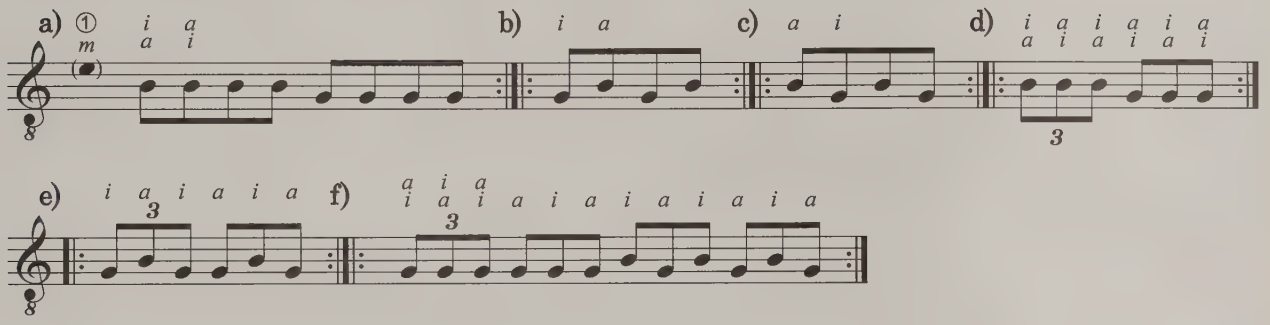
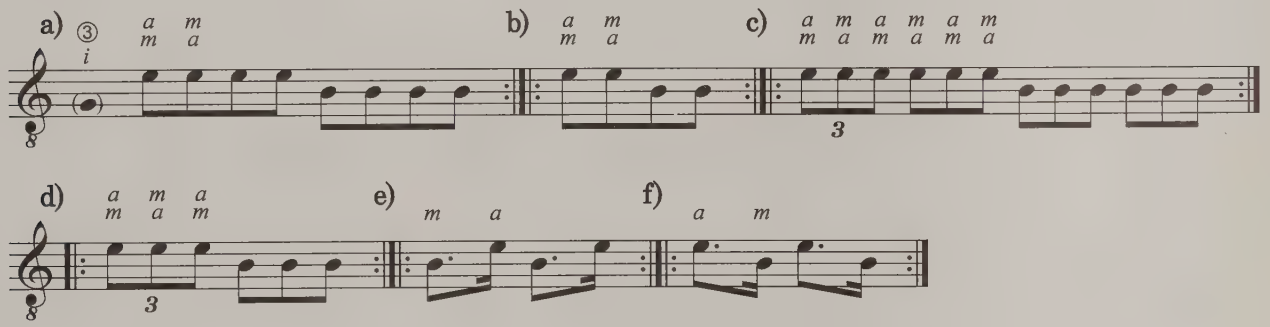
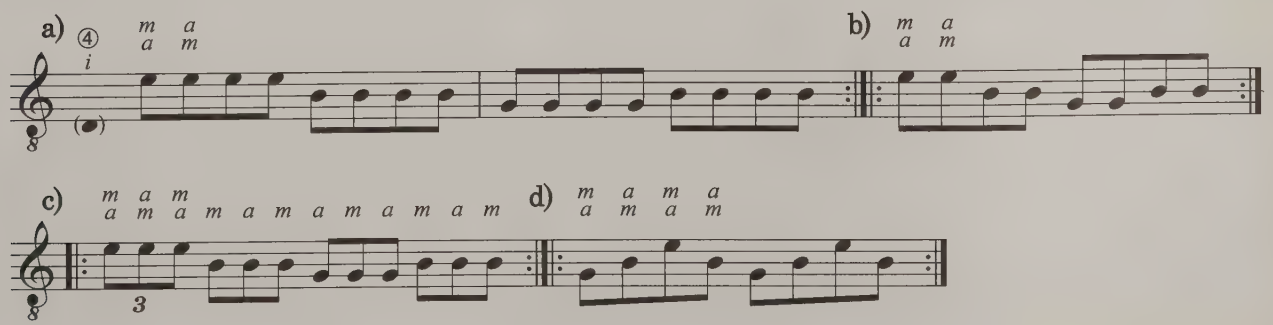
31 Alternate a-i Exercises, m Fixed on the 3rd String

32 Alternate a-i Exercises, m Fixed on the 1st String



33 Alternate m-a Exercises, i Fixed on the 3rd String

34 Alternate m-a Exercises, i Fixed on the 4th String



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IX. Practicing Playing Fast

The topics of speed and fluency play a large role when learning an instrument. Although the importance of speed is often exaggerated, it is still a requirement and indispensable when it comes to well-trained technical proficiency on an instrument. The reasons don't have to be explained in more detail here. Before the difficulties are discussed, you should be aware of the following:

1. Playing fast is predominantly required for short passages which are far more common than long, extended ones.

2. Although the finger reflexes of both hands have to be equally developed when playing the guitar and especially for the case when they are synchronized, the right hand takes on a special role regarding playing fast. One example is rapidly repeated notes which can only be performed by the fingers of the RH. They also play the main role when performing a tremolo (see p. 161) as well as any type of arpeggio.

Speed is not something you train by only playing fast or fast groups of notes. Slow, methodical and successively constructive movements of the hands are required, even for the most rapid motions of the fingers.

Speed and Relaxation

Playing fast requires you to be in a relaxed state. This doesn't mean that your muscle tone is nonexistent. Without a certain amount of controlled tension, playing fast is simply not possible. In fast passages, your desire to play fast and accurately can easily lead to additional physical tension. This has to be avoided at all costs. Playing fast must always be accompanied by conscious and controlled relaxation.

Practicing Playing Fast with the Right Hand

Speed Exercises

The following exercises can be found in chapter "II. Coordination of the Left and Right Hands":

Exercises 1–6, p. 91
Speed Exercises 7a)–p), p.92

String Crossing Exercises

The following exercises can be found in chapter "II. Coordination of the Left and Right Hands":

Exercises 8–15, p. 94
Exercises 18–19, p. 97

Fast Reflex Exercises Using 2 Fingers (Synchronization of RH and LH)

The following exercises can be found in chapter "II. Coordination of the Left and Right Hands":

Exercises 20–25, p.98

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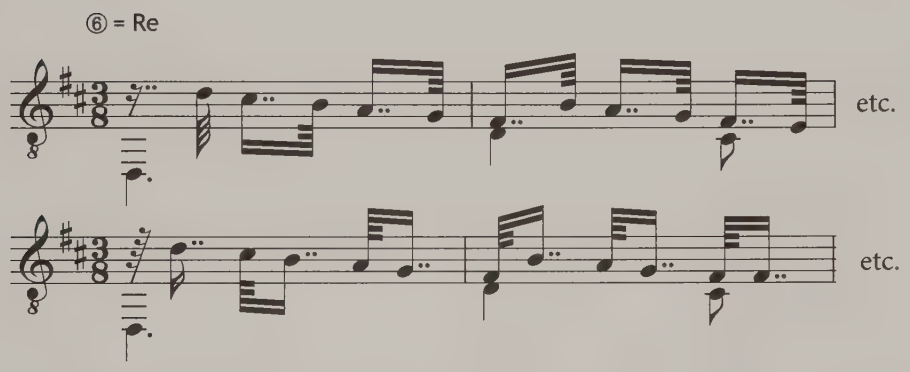
Pure Reflex Development with Double Dotted Rhythms

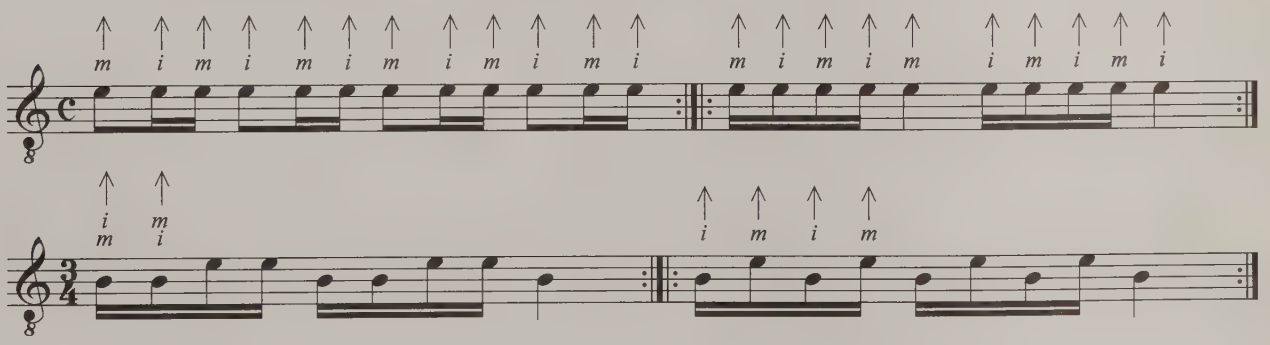
As illustrated in chapter "I. Arpeggios" (p.S. 50) it is only the finger that plays the short note in a double dotted rhythm that jumps to the string. This practicing method, in which only each second finger takes part in the reflex development, can also be applied to any work that requires you to play fast. The double dotted rhythm must also be performed in reverse.

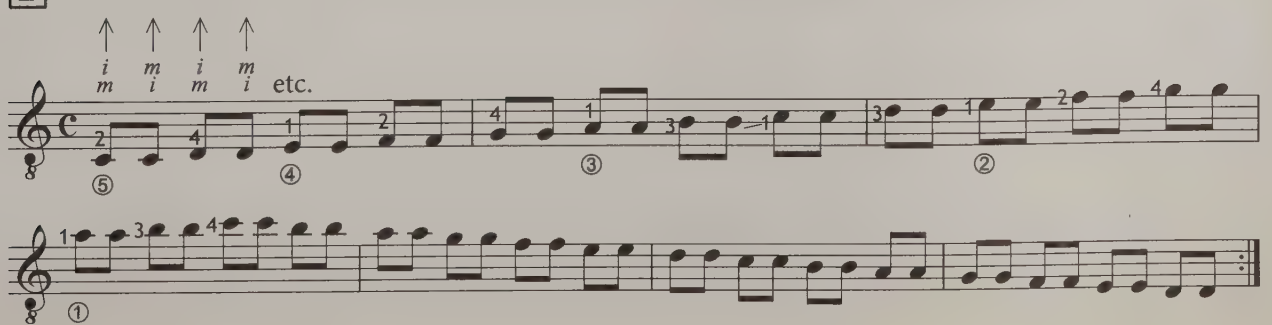
Practice using simple arpeggio patterns and note repetitions.
The short note has to be extremely short!

Using a movement from Bach as an example: "Allegro" from Prelude, Fugue and Allegro, BWV 998

Achieving Speed by Playing with the Outside of the Nail

The motion of the reverse attack using the outside of the nail corresponds to the rasgueado from flamenco technique with the one exception that only a single string is played. As in the rasgueado technique, the extensor muscles are developed. By practicing with the outside of the nail, you balance out the different directions of motion. As a result it promotes the speed of your reflexes.

↑ = Attacking direction using the outside of the nail

1 **Repetition Exercises on the 1st and 2nd Strings with m-i (Practice also with m-a!)**

2 **Scales with m-i and i-m, Repeated Notes Using the Outside of the Nail**



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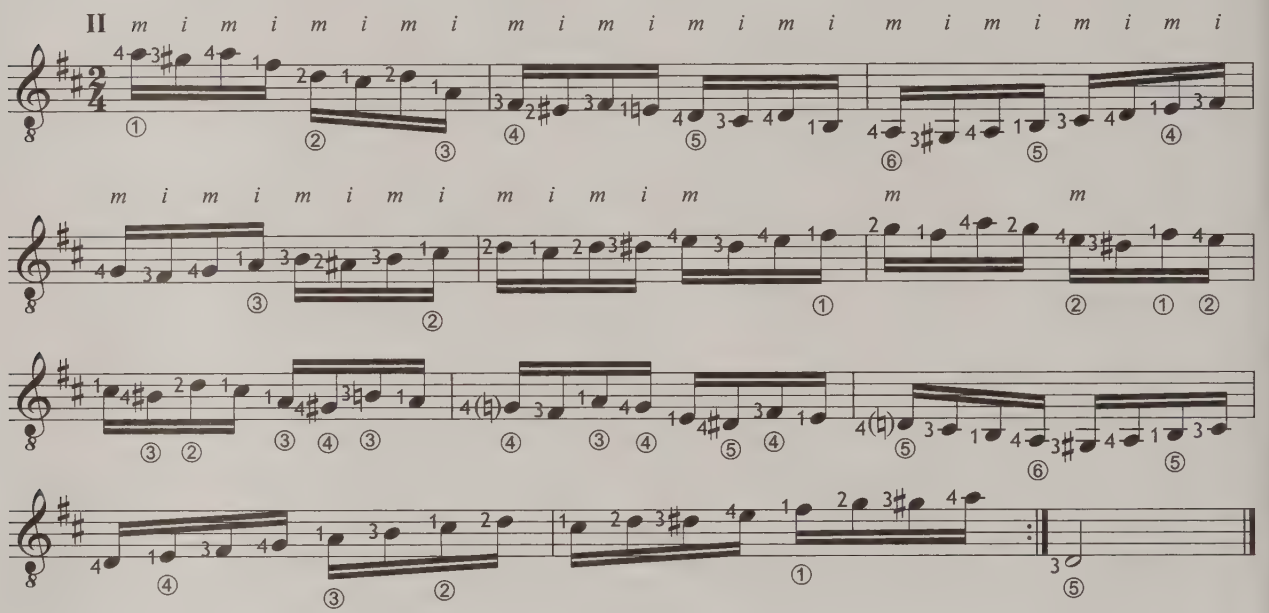
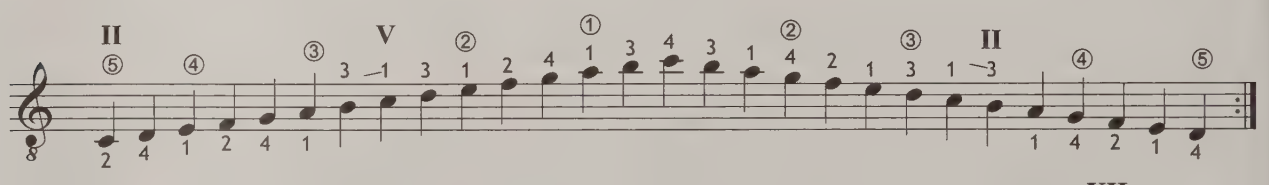
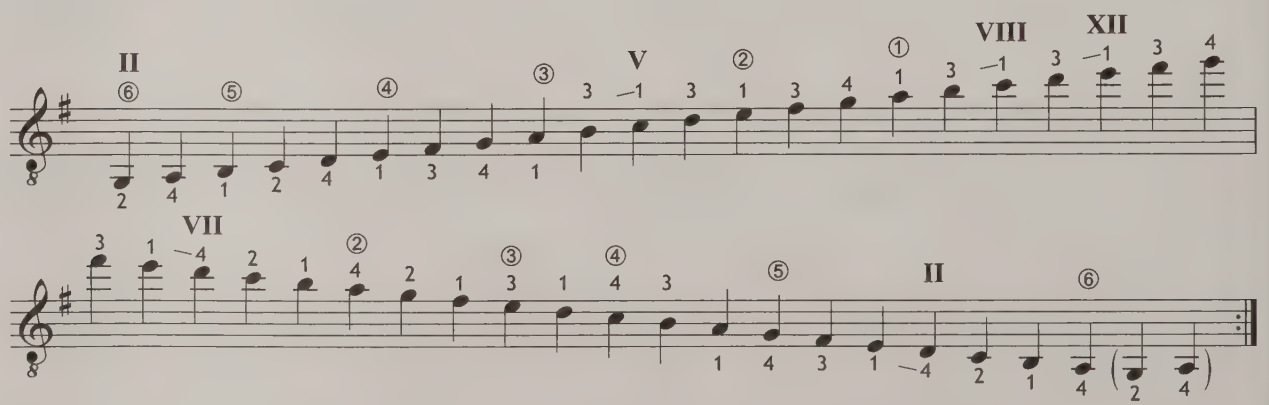
LH Fingers "Sloppily" Placed on Purpose (Without Pressure)

Conscious "sloppy" placing with the LH is a technique which serves to relax the LH. Here you are made aware of the different strengths and pressure that you apply with your left and right hands. As both hands tend to automatically give in to their symmetrical "right hand-left hand" impulses (i.e. the LH applies with pressure, the RH wants to play FORTE; the RH plays lightly, the LH fingers with too little pressure), this has to be trained consciously so that the LH doesn't tense up during fast passages. In these exercises, the right hand plays FORTE while the left hand applies with almost no pressure and, as a result, the notes are not clear and rattle!

3 Tárrega Exercise No. 7, Transposable up to Position IX



4 Scales over 2 and 3 Octaves Without Open Strings

C Major

G Major

Further scales without open strings:

D Major, B Minor, A Major, F♯ Minor see page 120
C♯ Minor, B Major, G♯ Minor, F♯ Major, D♯ Minor see page 121
D♭ Major, B♭ Minor, A♭ Major, F Minor, E♭ Major see page 122
C Minor, B♭ Major, G Minor, D Minor see page 123

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X. Exercises for Perfecting Musical Expression

Vibrato Technique

Vibrato (an Italian word that derives from the Latin *vibrare* = vibrate, tremble) is one of the most important, musical means of expression when playing guitar and is a term for periodic vibrations. In its most accomplished form it can be heard on instruments that don't have any frets or fret bars, i.e. string instruments. The use of vibrato demands profound knowledge of music interpretation as well as taste and stylistic assurance. Composers such as Leopold Mozart mentioned and described vibrato – still using the terms "tremolo" and "tremoleto" – in his violin method from 1756 in its 3rd edition in 1787. He demanded however its controlled and sparse use as players exist who literally "quiver with every note, as if they had a perpetual fever."
In the 20th century, the permanent vibrato effect (continuous vibrato on almost every note) becomes the rule only then to be put into question – during the 1960s and 70s – if nothing else because of the new ideas for Baroque music performance animated by contemporary sources from the 18th century. Guitarists also spent the first half of the 20th century imitating the intensive vibrato of violinists of their time. In the meantime however, an elegant and tasteful vibrato has become the norm for guitarists which is appropriate for each musical style.

Sequence of Motions for Vibrato in the Left Hand

In contrast to string instruments in which the vibrato vibrates from an in tune note to a lower pitch, it is exactly the opposite with the guitar: the vibrating of the finger and the varying pressure produced by it cause the note to sound higher. The width of the vibrato (called "amplitude" henceforth) on the guitar, whose strings have a clearly defined scale length when placing the fingers on the frets, is, compared to string instruments, noticably less. To produce a wide vibrato, the finger pressure has to be very high and the finger/hand movement has to be distinctly large.
Prerequisites for good vibrato are limber and flexible finger joints, just as flexible a wrist as well as a left hand thumb that doesn't grip too tightly. Clinging too tightly to the neck with the left hand has to be strictly avoided.

In practice, a distinction is drawn between two different types of vibrato on the guitar:
1. The arm-hand vibrato which vibrates horizontally in respect to the strings,*
2. the less used finger vibrato which vibrates perpendicular (vertical) in respect to the strings.

Regarding 1: In the arm-hand vibrato, the impulse of movement originates in the forearm in parallel motion to the strings in the direction of the saddle and back. This transfers into regular vibrations in your hand and fingers which are placed with just enough pressure on the strings to make sure that they sit stable and secure.

Regarding 2: The more rare finger vibrato is achieved by a vertical pulling of the strings in a "back and forth" motion. This technique is frequently used on the bass strings at the 1st and 2nd frets. This is often the case in contemporary works where it is actually employed on all strings. When doing so, the amplitude of the vibrato can be wider than that of the normal arm-hand vibrato.

*Note: The term "arm-hand vibrato" is not totally accurate because we are primarily dealing with an arm vibrato. If the amplitude of the vibrato has to be large – which is musically rare – then the major source of motion is the hand.

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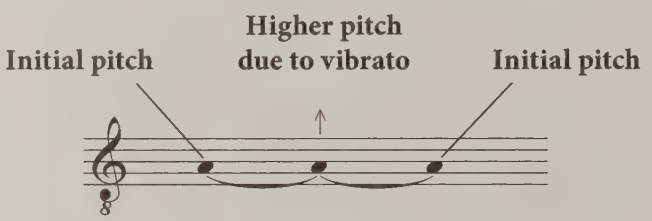
In order to understand vibrato better, you have to get to know the individual components of vibrato. It consists of:

1. the pitch of the initial note
2. a higher pitch produced by vibration
3. the pitch of the initial note again

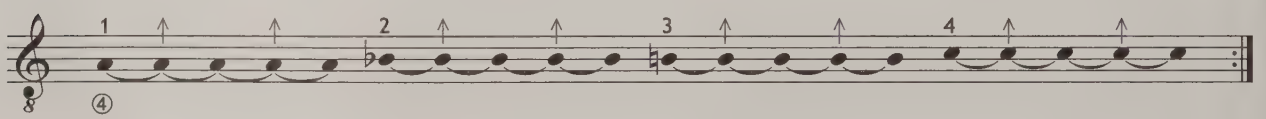
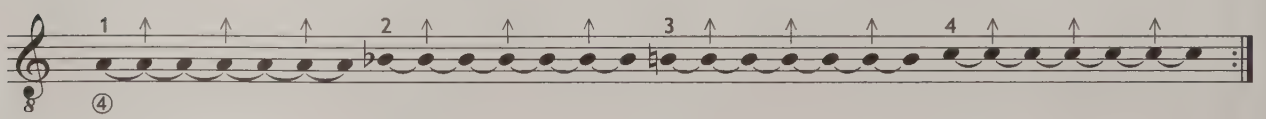
In order to have good control of vibrato, a guitarist has to be able to manipulate the size of the amplitude and the speed of the vibrato (the frequency of the vibrations) and vary them according to the musical circumstances, i.e. slow them down and accelerate them as necessary. Therefore the initial vibrations should be rhythmically defined in the beginning.
In musically employing vibrato, the vibrations are, naturally, not specifically counted. Their execution depends on your own personal taste and the respective musical style which, when taken together, will dictate just how fast and with which amplitude you perform the vibrato. With e.g. Regondi, Barrios, José and Villa-Lobos, the vibrato has to be wider and more intense than with Bach, de Visé and Sor. Vibrato can also be used to lengthen a note, for example when it begins at some point after the initial attack. To achieve this, your finger pressure has to slightly increase at first and then decrease time-wise in parallel as the note dies away.

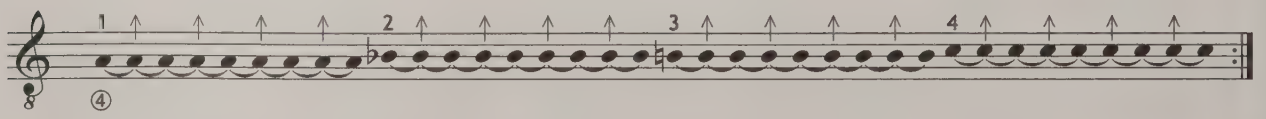
Rhythmic Vibrato Exercises

The following exercises are notated using notes without stems for better comprehension. The notes without arrows represent notes that have the initial pitch. The notes with arrows are notes of higher pitch produced by a vibrato movement. All the notes are tied together and result from a single attack. The vibrato motion from the initial pitch to the higher pitch and back is performed in slow eighth notes.



1 Practice on all strings in position VII!

a) Vibrato exercise with 2 vibrations:

b) Vibrato exercise with 3 vibrations:

c) Vibrato exercise with 4 vibrations:



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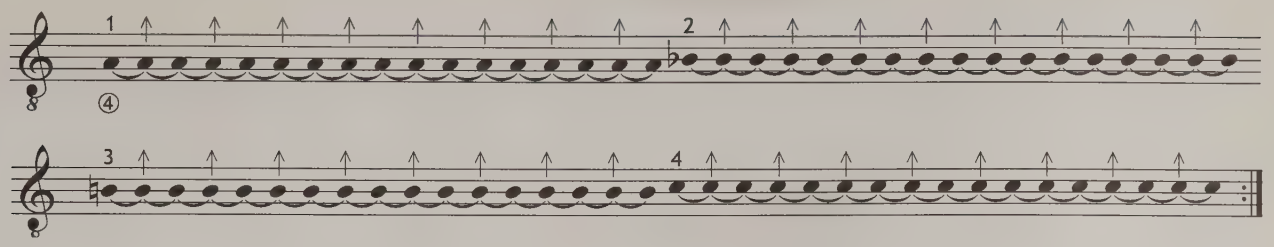
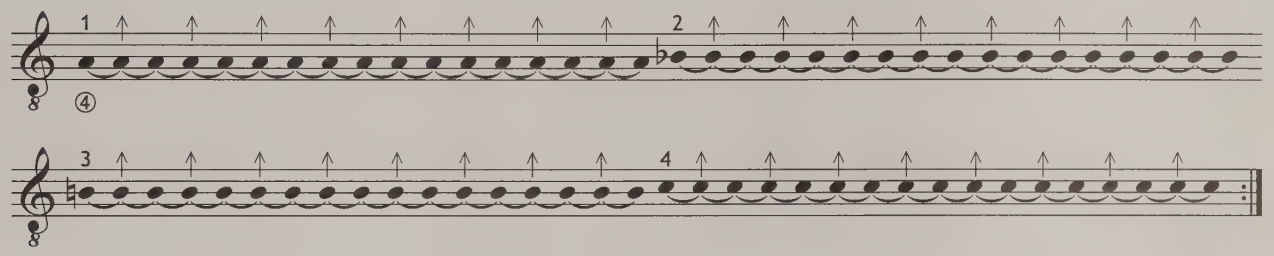
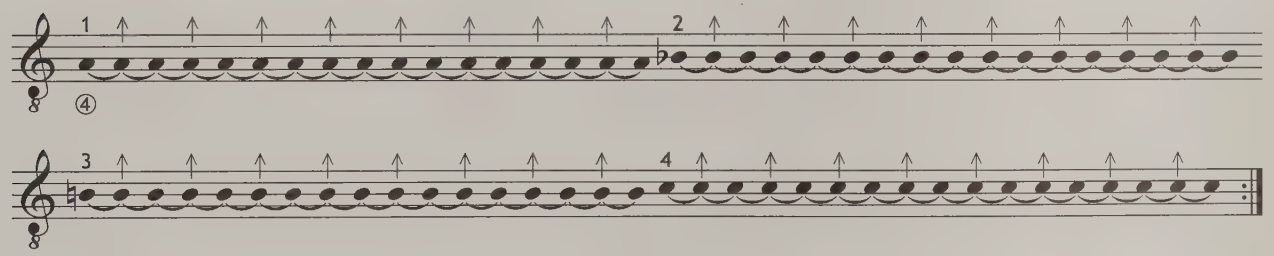
d) Vibrato exercise with 8 vibrations:



2 Exercises for Developing the Flexibility of Hand and Fingers

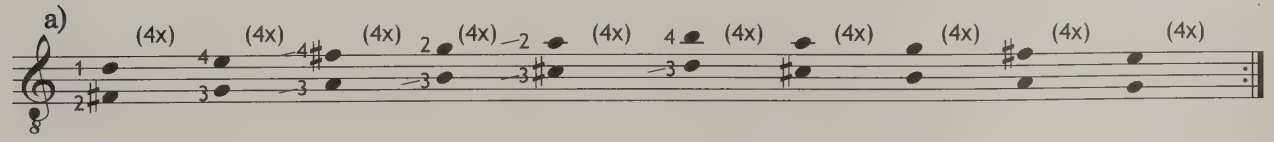
a) The vibrato motion should originate solely in your fingers. Swing your fingers 1–2 cm to each side of your hand while keeping them parallel to the strings. Your hand and arm should be held as calm and still as possible. Practice with all your fingers in position VII on the 2nd, 3rd, 4th and 5th strings.

b) The motion this time should emanate from your wrist. Here your hand moves diagonally in relationship to the strings, 3–4 cm to the rear and then back again. Your fingers automatically move along with your hand. Your arm should be held as calm and still as possible. Practice with all your fingers in position VII on the 2nd, 3rd, 4th and 5th strings.



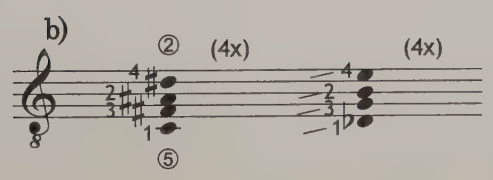
3 Vibrato Exercises with Two or More Fingers

The motion involved in playing vibrato using two or more fingers is performed exactly like normal vibrato using one finger. Here the fingers and the wrist have to be very flexible. The motion of the fingers has to be synchronized. They shouldn't be allowed to be pressed down too firmly on the fingerboard. The characters "4×" stand for the number of vibrato movements to be performed.

a)



b)



etc. shift chromatically

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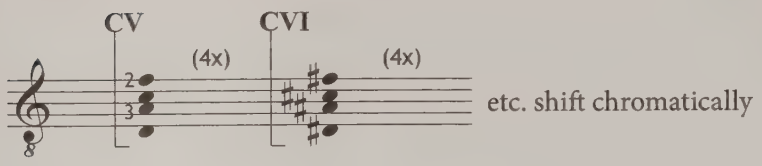
4 Vibrato Exercises with a Barre

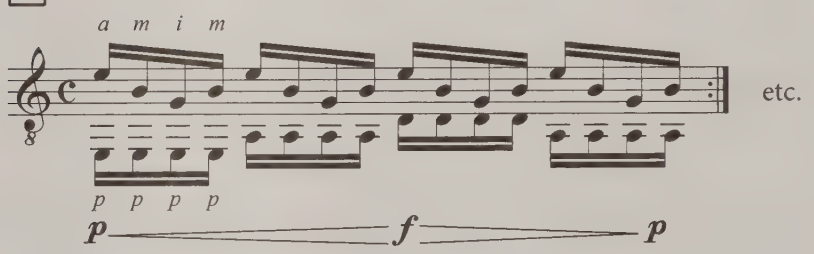
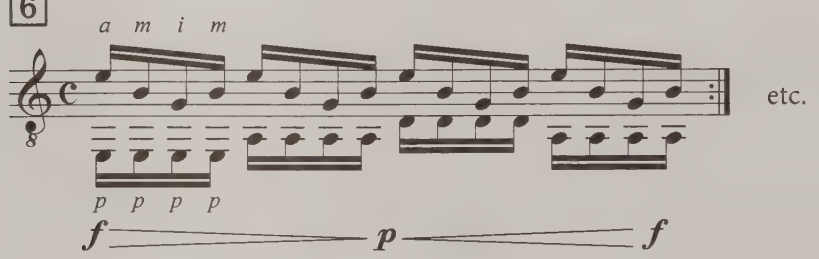
The vibrato motion while playing with a barre matches that of normal vibrato. The arm vibrations have to be directly transferred to the barre finger whose movement is synchronously adopted by the other fingers. The characters "4×" stand for the number of vibrato movements to be performed.



Exercises for Practicing Dynamics

Developing a Broader Dynamic Range

Some guitarists are unable to take advantage of the full potential dynamic range of their guitar. It's especially the dynamics when moving towards forte that can be improved. The following two-part exercises, which can also be found in chapter "I. Arpeggios" (A21, p. 84) are presented here additionally with dynamics.

5

6

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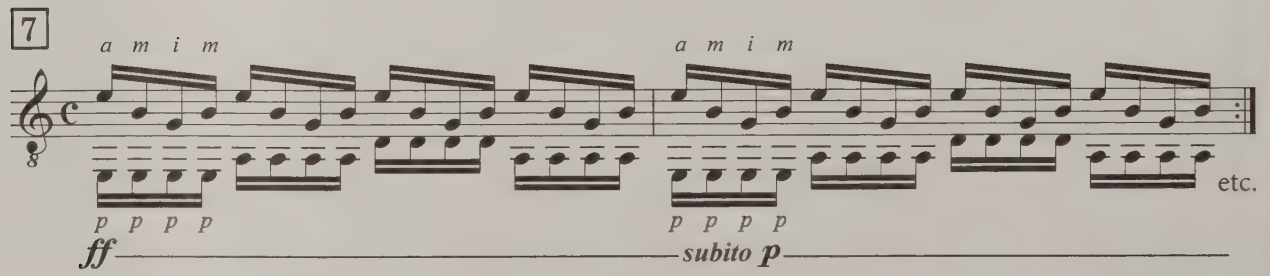

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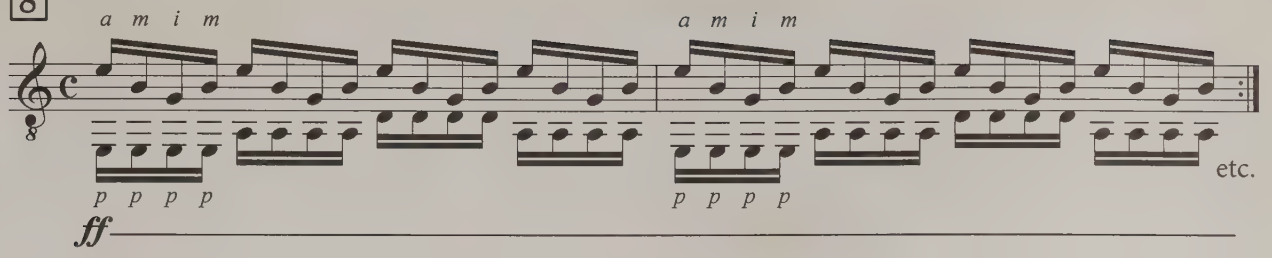


Exercises for Fine Tuning Dynamics

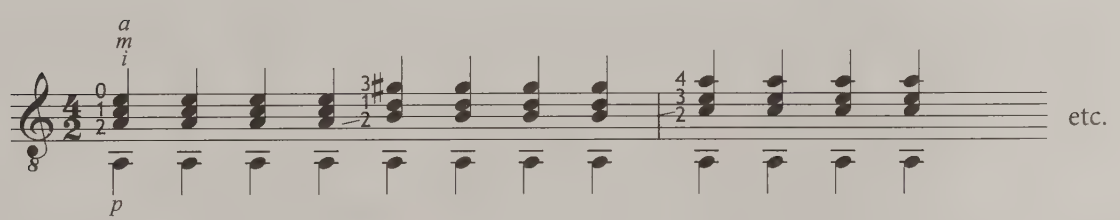
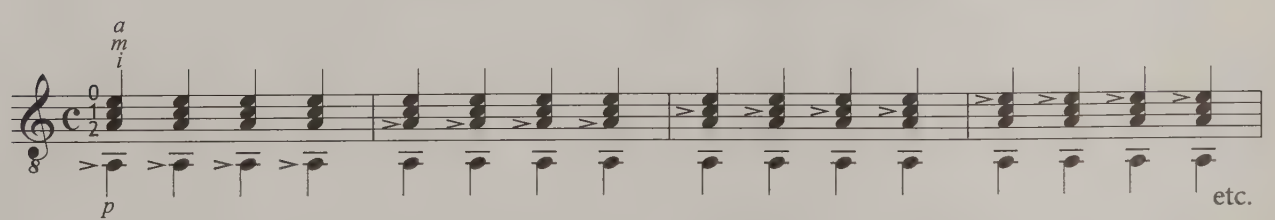
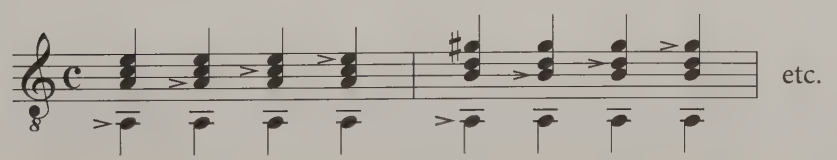
In a Four Note Chord

The sequence of motions involved in playing chords is explained in detail in Part One on page 45. Following the instructions given there is a prerequisite for the following voice leading exercises using four note chords. The four common vocal ranges or parts allow us to give each of the four notes in a four part chord an appropriate label. Respectively:

p = bass **i** = tenor **m** = alto **a** = soprano

The part that is supposed to stand out in the four note chord has to be clearly audible as the lead part or voice, even if it quickly jumps, for example, from the bass to the soprano or from the bass to the tenor part.

The following exercises should be practiced together with the **Carcassi Etude op. 60, No. 2** found on page 214.

9 **Simple chord repetitions as a preparatory exercise:**

10 **Chord repetitions with alternating accents in the bass, tenor, alto and soprano parts:**

11 **The accents on the individual notes of the chord alternate directly from bass to tenor, to alto and to soprano:**

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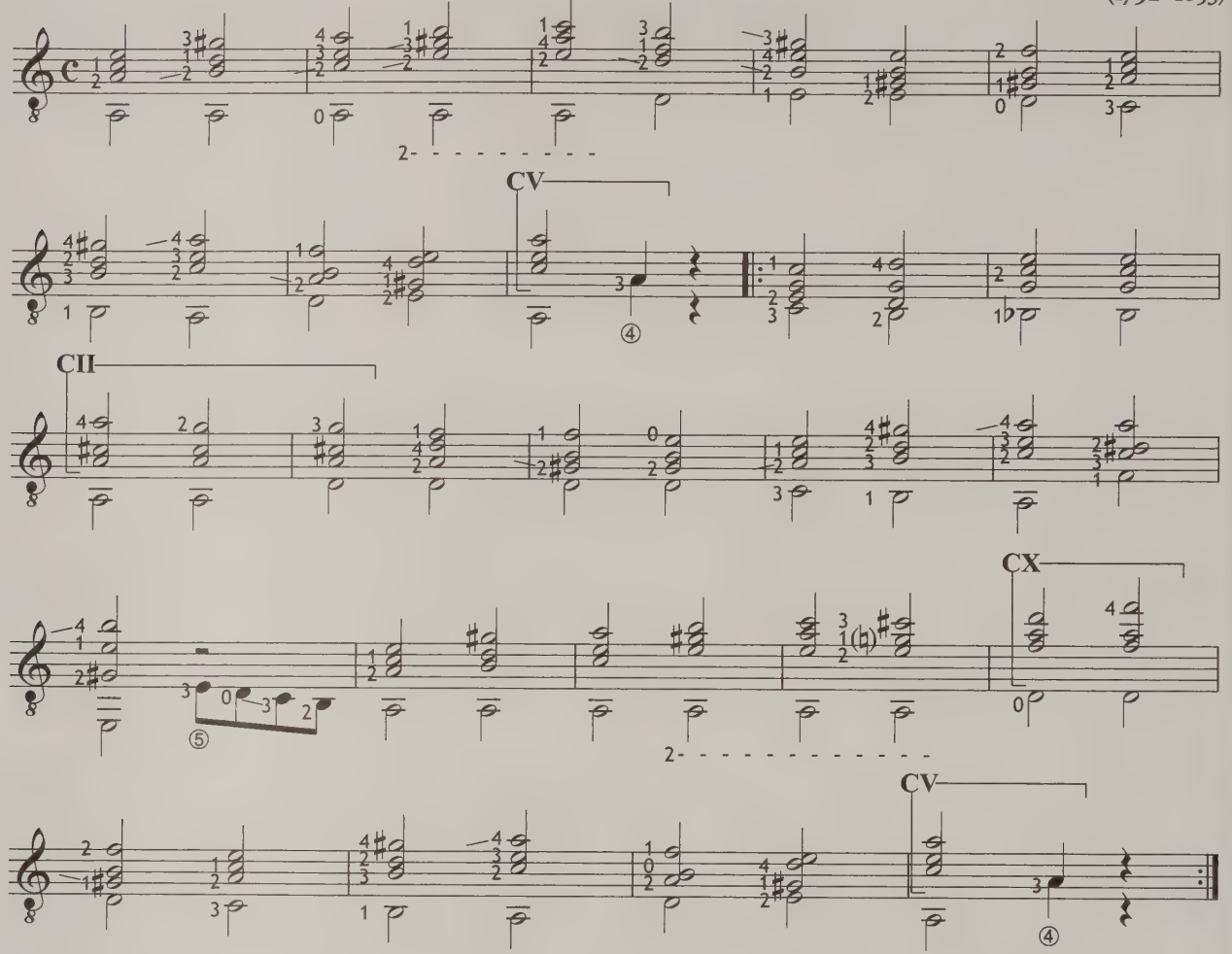
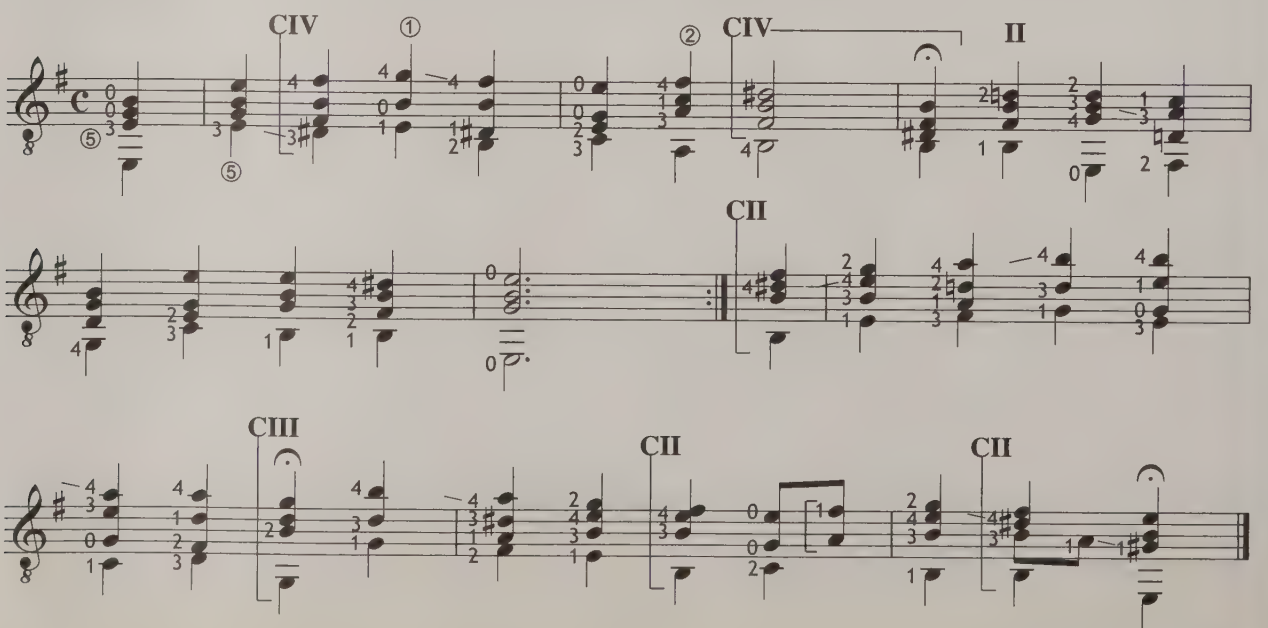
M. Carcassi: Etude in A Minor op. 60, No. 2
The harmonic framework of the etude (see Exercises 9, 10 and 11 on page 213):

Matteo Carcassi
(1792–1853)



12 **J. S. Bach: Four Part Chorale "Wer weiß, wie nahe mir mein Ende" (Originally in G Minor, Arr: Käppel)**

Make the soprano stand out the first time, the bass the second time, the tenor the third time and the alto the fourth time you play it.



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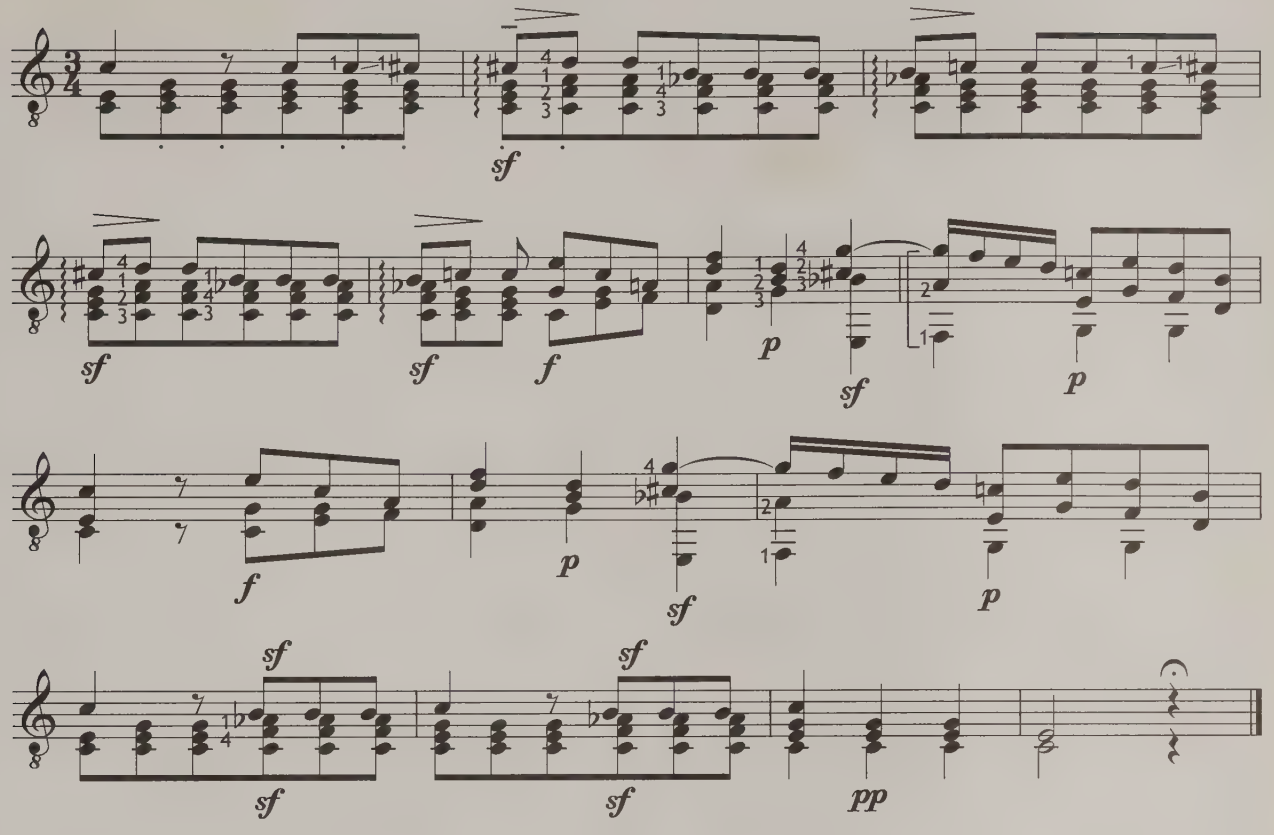
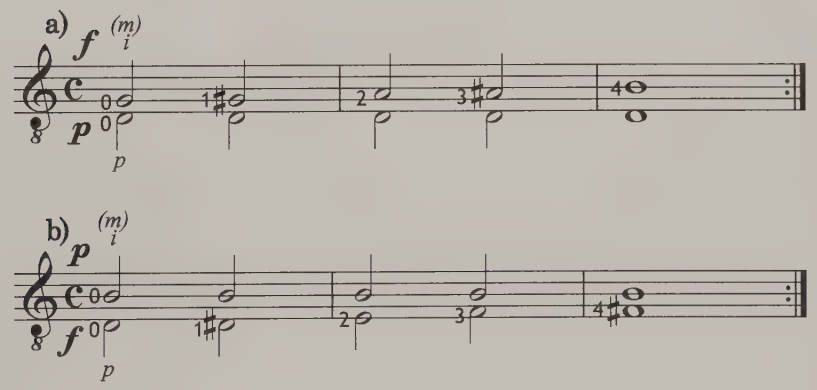
13 An example taken from the guitar repertoire using four note chords:

Anton Diabelli: Sonata in C Major, Andante sostenuto, the last 14 measures



14 Exercises At Different Dynamic Levels in Two Part Harmony

Upper part FORTE, lower part PIANO and vice versa:



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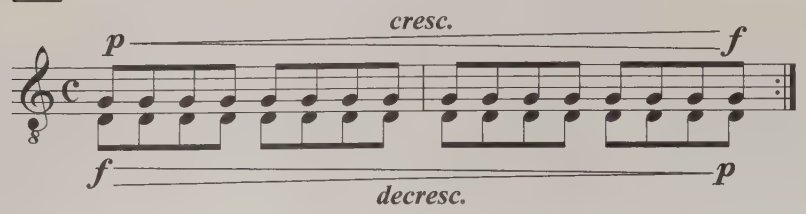
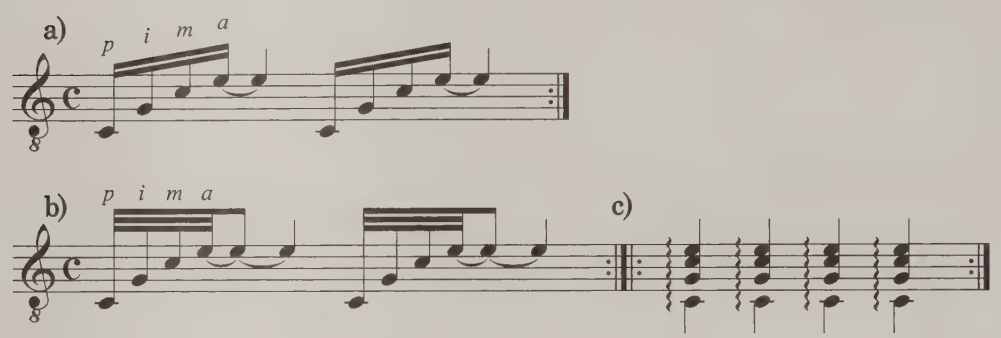
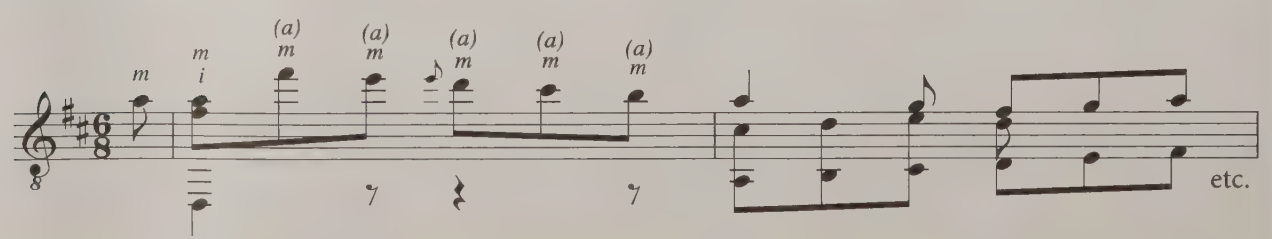
15 Crescendo in the upper part, decrescendo in the lower part simultaneously:

The Arpeggiated Chord (Rolled) in a Polyphonic Chord

16 In addition to the chord where all the notes are performed simultaneously, there is also an arpeggiated (rolled) chord – found often in early music – which is frequently used as an expressive device. Assuming properly shaped and polished nails (see p. 37), here your focus should be on the evenness of the arpeggiated notes and the slight accent applied to the upper part played with a round tone.

17 The Carcassi Etude op. 60 in A Minor, No. 2 (p. 214) is well suited for further practicing arpeggiated chords.

The "Elastic" Wrist Attack in Dolce Cantabile Playing

You can achieve an especially warm, singing and smooth tone with a longer fingernail – predominantly on the treble strings – if you perform your attack in a somewhat larger, flexible motion that emanates from the wrist and proceeds in the direction of the bass strings. To this end, the left ramp of your nail (see p. 38) should be allowed to slide along the string like the bow of a violin. The note is minimally lengthened and takes on, when combined with a good vibrato (see p. 209), an especially cantabile (singing) and "sweet" character. You can also use this technique on thirds and sixths played with two fingers, i.e. using **i-m**, **i-a**, **p-m** or **p-i**. It is also equally suitable for performing arpeggiated chords so you can make the highest note stand out.

Example: Fernando Sor, Malbroug Variations op. 28, Beginning of the 4th Variation

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Part Three

Important Topics

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I. Fingering Technique

When we talk about fingering technique, the guitarist initially thinks of his left hand. The guitar, however, is one of the few instruments whose sound is directly produced by the fingers of the right hand. This is why the fingerings in the right hand, which have to be coordinated with the fingerings in the left hand and vice versa, play just as large a role as those in the left. Although exact fingerings will individually vary based on different hand sizes and personal taste, there are general rules that have to be taken into account. The following short description of the problems and complexity you will encounter in fingering technique is only an introduction to this topic.

Fingering and Interpretation

When developing and setting fingerings, there are are two views that have to be brought into line with each other: the musical, which concerns the fingering that achieves the best tonal result possible, and the technical, which dictates that the fingering should be easy and comfortable. Based on the fact that you can play the same note on the guitar on 3, 4 or even 5 different strings, each of which possesses its own distinctive tonal color, the choice of the right fingering that makes the most musical sense is a complicated one. It's not difficult to recognize that your fingering choice influences the interpretation that incorporates that choice. Accordingly, proper interpretation is, to a great degree, dependent on the fingerings you choose to use. And as a result, it's impossible to develop fingerings for a new, unfamiliar work if you do not yet have a musical vision or idea for the piece. Here you have to add profound knowledge of styles from a variety of musical eras. A glissando in a Dowland dance is as inappropriate as the heavy/light phrasing approach commonly found in Baroque music would be for the beginning runs of Villa-Lobos' Etude No. 7.

The adding of LH slurs can change the overall sound and thereby the musical statement being made. Two note slurs that start on a non-accented rhythmical beat (the 2nd or 4th note of a four note group) in a classical or baroque work often sound too "jazzy," especially when they're accented.

Equally, modern nylon (or carbon) strings contribute greatly to the necessity of revising fingerings in older music editions and methods. If you consider the fact that nylon strings first came into use in the 1940s, you will understand why many of the fingerings are found on the 2nd string of earlier Segovia or Tárrega editions: the 1st string, the most delicate gut string, was avoided due to its tendency to break easily.
Taking everything into account when creating fingerings for both hands, the musical and tonal considerations should always have priority over any aspects regarding convenience and comfort. Even if the tonally preferable choice appears to be more difficult, in the end it's always easier to convince an audience with a musically meaningful and expressive interpretation. However, you will not be able to avoid making compromises for the sake of better playability which do not necessarily reduce musical expression.

For reasons of clarity, the topic of fingering will be divided into "Fingerings in the Left Hand" and "Fingerings in the Right Hand." In practice however, the fingerings in the LH have to be strictly coordinated and harmonized with those of the RH – especially during rapid passages.

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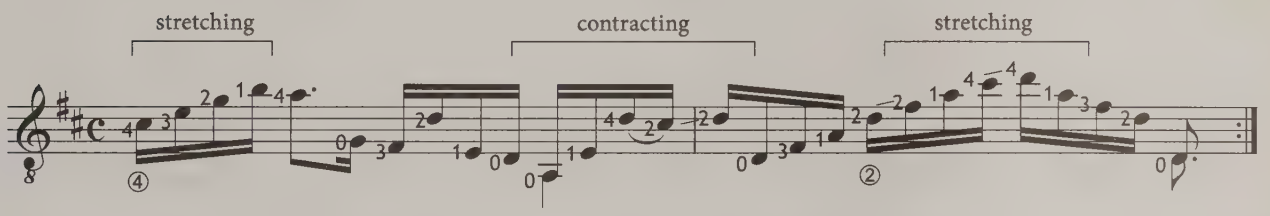
Left Hand Fingerings

Based on its complexity, this topic can only be thoroughly covered through the examination of practical examples. The following explanations and practical suggestions regarding the special issues of LH fingerings should help you in your search for and conception of those fingerings.

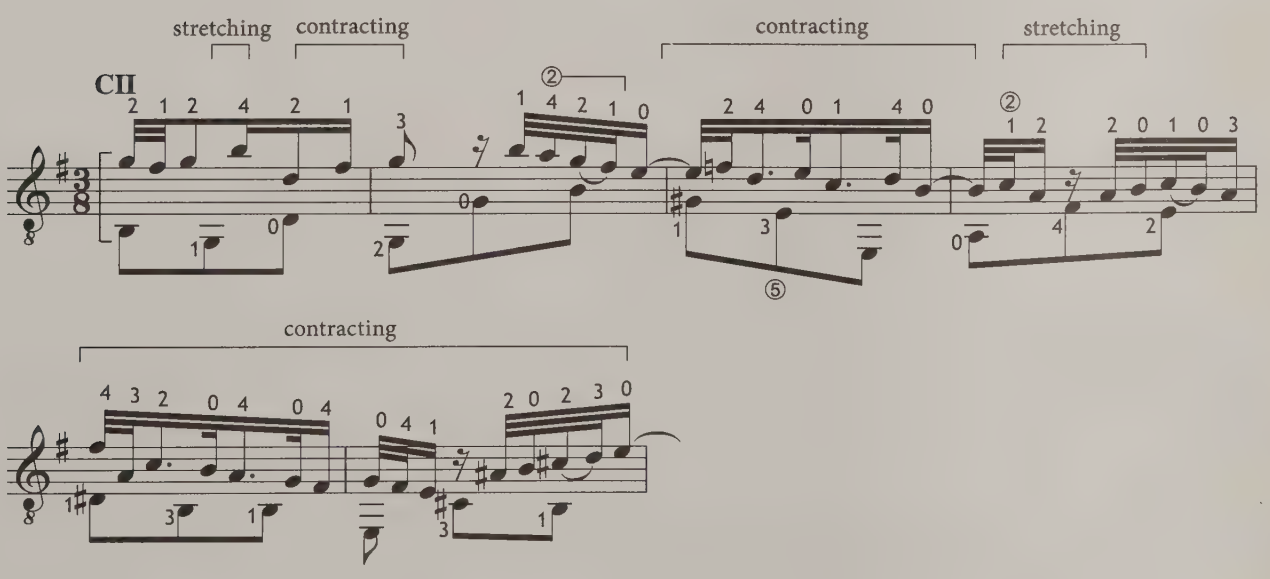
1. Tension and Release

The fingerings in the LH should be conceived so that the LH is not permanently under strain. Tension is created by full barres that last for a prolonged period, by stretching and even by placing fingers 1, 2, 3 and 4 down, one after the other, onto a single string (see also "Stretching and Contracting the Fingers." p. 30). Passages and chords have to be investigated to see if it's possible to apply a fingering which causes little or no tension in the left hand.

Example 1: Stretching (tension) – Contracting (release) in Bach's Allemande from the 1st Cello Suite in D Major, BWV 1007, Measure 31 to the end (Arr.: Käppel)



Example 2: Stretching and Contracting of the fingers in Bach's Corrente from the 6th Piano Partita in E Minor, BWV 830, Measures 37–42 (Arr.: Käppel)



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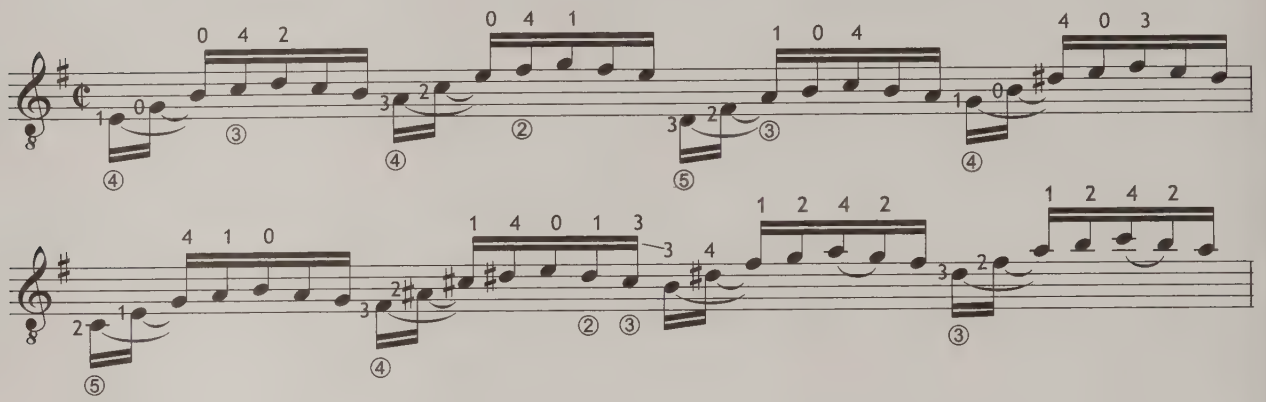
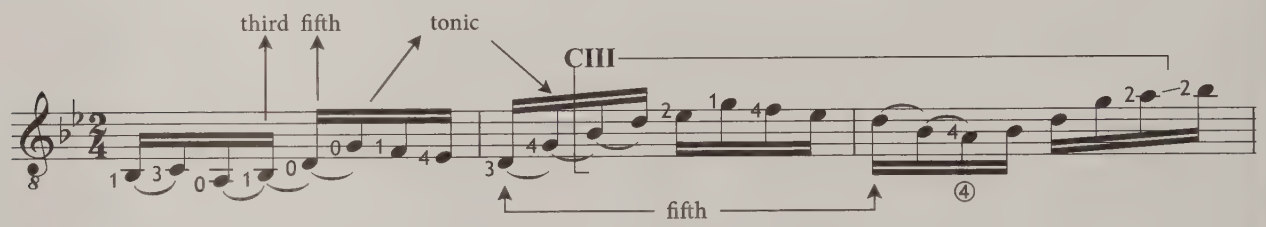
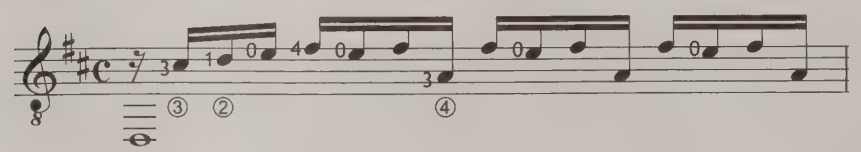
2. Incorporating Harmonic Reasoning when Developing LH Fingerings

The guitar is a harmony instrument. If tonic, fifth and sometimes also the third are incorporated into a LH fingering, you provide the guitar, as a pedal point, with more volume and sound. The short, percussive tone of the guitar sustains longer and is richer in overtones.

Example 1: Bach, Toccata from the 6th Piano Partita in E Minor, BWV 830, Measures 3–4 (Arr.: Käppel). Here even non-chord, dissonant notes are allowed to sustain!

Example 2: Barrios, Preludio op. 5, No. 1, Measures 4–6

3. How to Use an Open String

In early 20th century guitar editions, open strings were avoided. This changed during the 1970s and 80s. The use of an open string is not only common when shifting positions, but also during runs and similar passages. It also simplifies legato playing considerably. The differing tonal colors created by an open string versus a fingered one underline the most important characteristics of the instrument: the wealth of tonal colors and harmonic variety.

Example 1: Kellner, Fantasy in D Major, Measure 4 (Arr.: Käppel)



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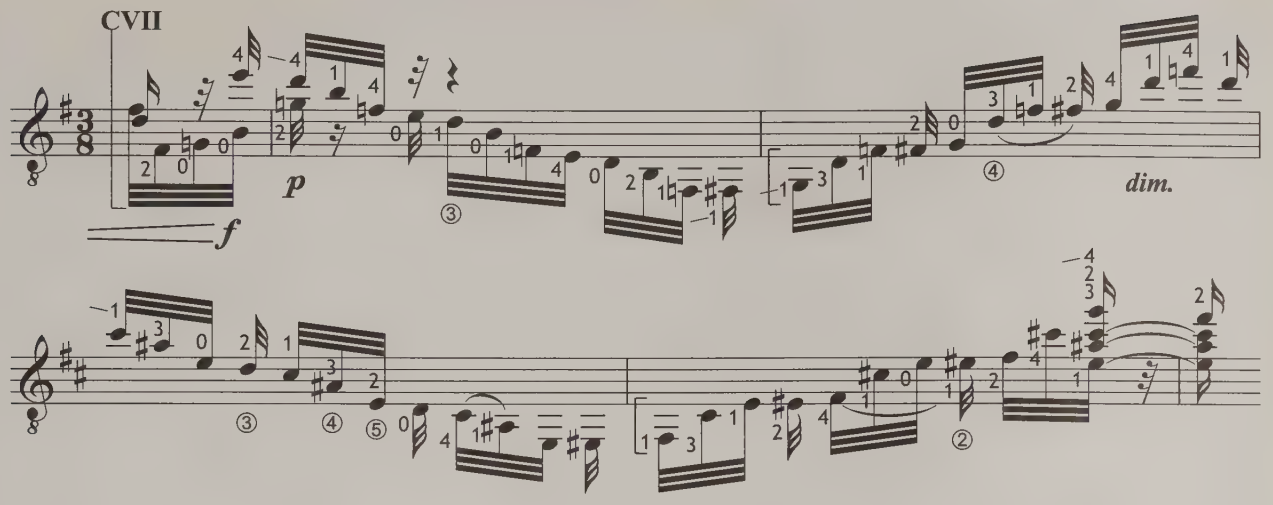
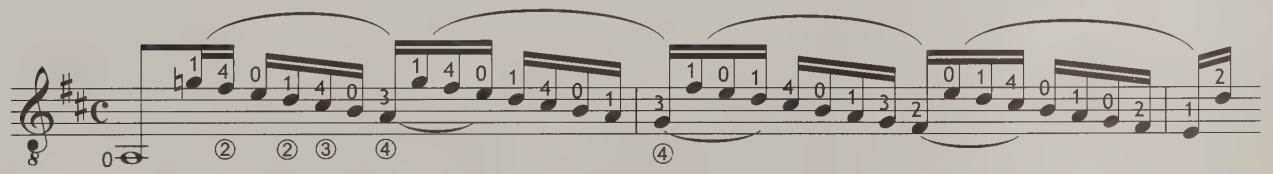
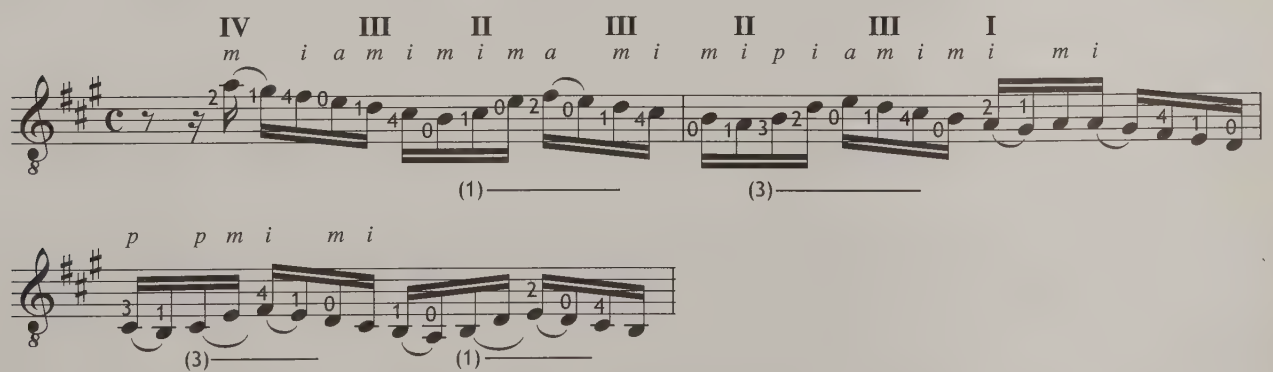
Example 1: Brahms. Intermezzo op. 117, No. 2, Measures 42–47 (Arr.: Käppel)

4. The Open String in Scales

By incorporating open strings into runs under a slur marking, you achieve a tonally balanced, legato effect.

Example 1: Bach, 1st Cello Suite in D Major, BWV 1007, Prelude, Measures 29–30 (Arr.: Käppel). The upper slurs designate phrasing, the lower slurs sustaining.



Example 2: Kellner, Fantasy in A Major, Measures 1–3 (Arr.: Käppel)

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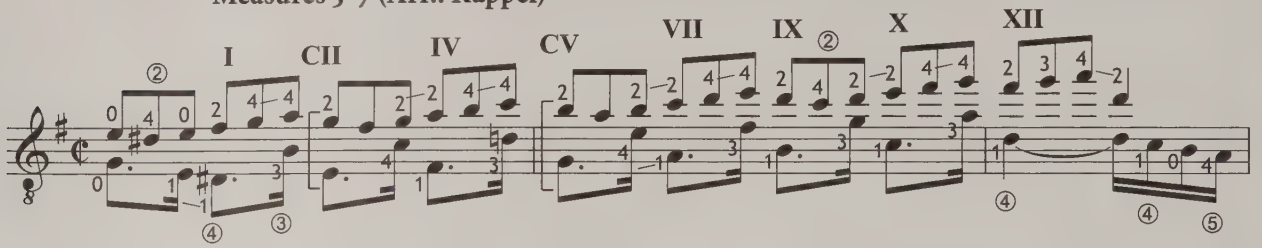
5. Analogous Fingerings

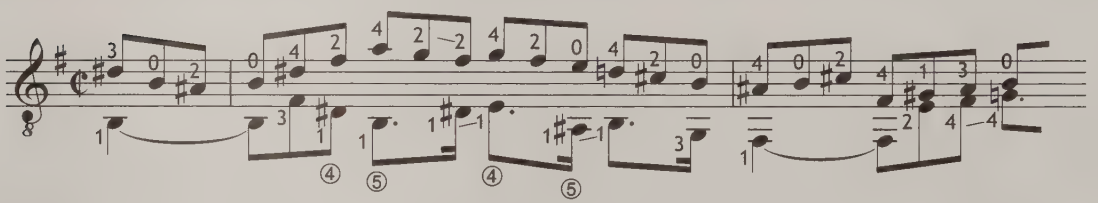
In economical hand posture, your hand and fingers should not leave their directional positions if possible. Therefore you should, for example with complex, polyphonic passages, create fingerings such that the fingering patterns remain the same, even after you've shifted positions. This way the fingers can reach their new positions with more ease.

Example: Bach, Tempo di Gavotte from the 6th Piano Partita in E Minor, BWV 830, Measures 5–7 (Arr.: Käppel)

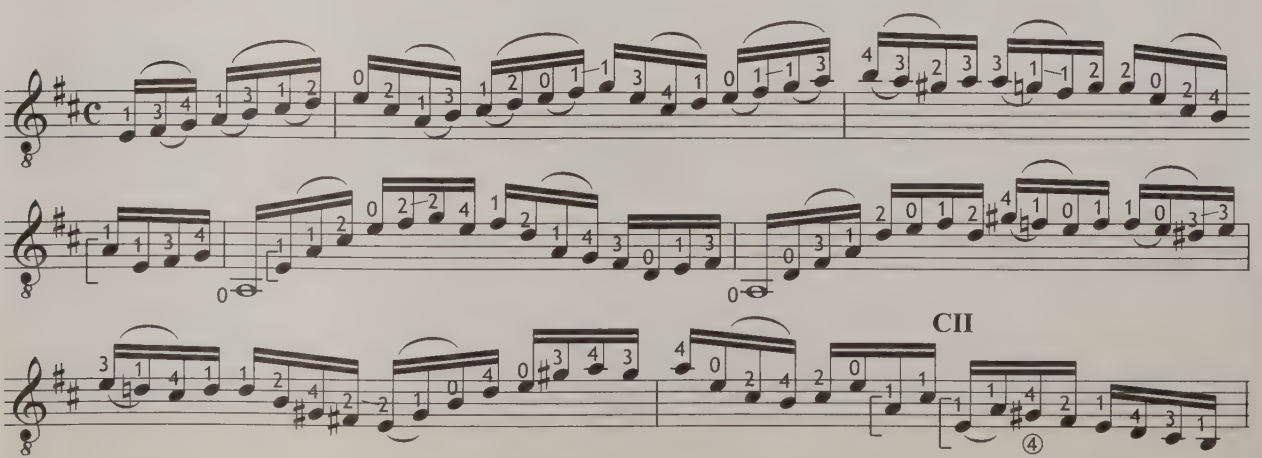


6. Jumping with One Finger

Jumping from string to string with the same finger – especially between adjacent strings – saves the hand a lot of stretching. It's still often avoided although it isn't anymore difficult (or less "legato") than sliding along a single string.

Example: Bach, Tempo di Gavotte from the 6th Piano Partita in E Minor, BWV 830, Measures 16–18 (Arr.: Käppel)

7. Special Issues with Fingerings Including Slurs

Technical slurs in the left hand rarely correspond to the phrasing slurs in music. As many phrasing slurs extend beyond just 2 notes, an appropriate rendition of the phrasing can only be achieved through mixture of attacked notes over 2 or more strings – which also sound "legato" – and slurred notes in the LH. This is exhibited in the first example. In example 2, the 32nd note runs of the famous Bach "Chaconne," slurs with 6 plus 2 notes are employed.

Example 1: Bach, 1st Cello Suite in D Major, BWV 1007, Prelude, Measures 22–28 (Arr.: Käppel). The upper slurs designate phrasing, the lower ones technical slurs.

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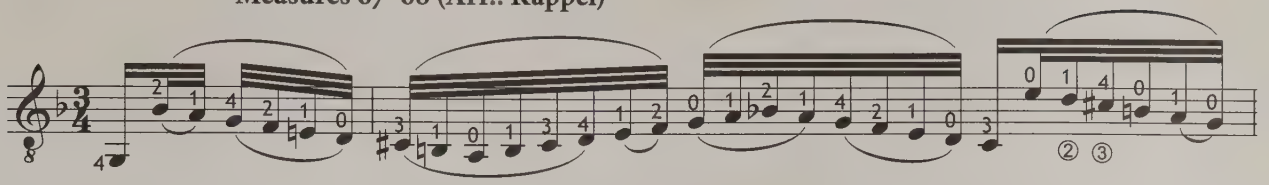
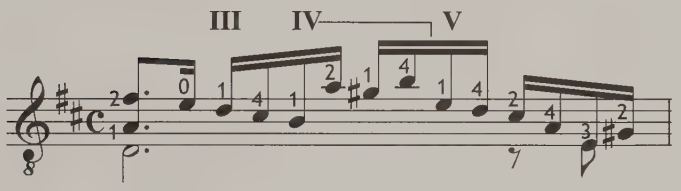
Example 2: Bach, 2nd Violin Partita in D Minor, BWV 1004, Chaconne, Measures 67–68 (Arr.: Käppel)



8. Shifting by Contracting 1 and 4

A shift of 1 or 2 frets can be performed by the 1st and 4th fingers. Here the 4th finger is placed 3 frets away from the 1st finger (according to the four finger position shape, p. 25). The 1st finger creeps towards the 4th and reaches the next higher position. This technique is very relaxing for the LH. In the following example, at first position IV is reached and then position V.

Example: Bach, 1st Cello Suite in D Major, BMW 1007, Allemande, Measure 15 (Arr.: Käppel)

Right Hand Fingerings

One of the main tasks of the fingers of the right hand are string crossings. This is when the most mistakes are made and primarily due to the "unconscious" use of RH fingerings. Many guitarists think it's unnecessary (out of ignorance) to define the starting finger in passages with alternate i-m, for example. I have also noticed that, during complex string crossings, only some fingerings are indicated but not consistently written down for every note. It should also be added that the active area for RH fingerings, in comparison to the LH, is very small and difficult to control. In a space of about 5 cm, complicated sequences of motion can only be executed with detailed RH fingerings and their strict observation. The following general rules and explanations regarding RH fingerings should make it easier for you to deal with the complexity of this subject so that you will develop and apply your RH fingerings more consciously in the future.

1. Basic Fingering Rules for the Fingers of the Right Hand when Crossing Strings

The following basic fingering rules provide the foundation for proper RH fingering. Corresponding to their assignments from the 6th to the 1st strings, the order of the fingers is **p-i-m-a**, from the 1st to the 6th strings, **a-m-i-p**.

When changing to a neighboring string, for example from the 1st to the 2nd or the 2nd to the 3rd, the following finger patterns are the best ones: **a-m**, **m-i**, **a-i**, **i-p**, **m-p** and **a-p**.

When switching from the 3rd to the 2nd or the 2nd to the 1st string: **m-a**, **i-m**, **i-a**, **p-i**, **p-m** and **p-a**.

If you leap over a string, for example from the 1st to the 3rd or the 2nd to the 4th, use: **a-i**, **i-p**, **m-p** and **a-p**.

In the opposite direction: **i-a**, **p-i**, **p-m** and **p-a**. Refer to the the **tablature diagrams**.

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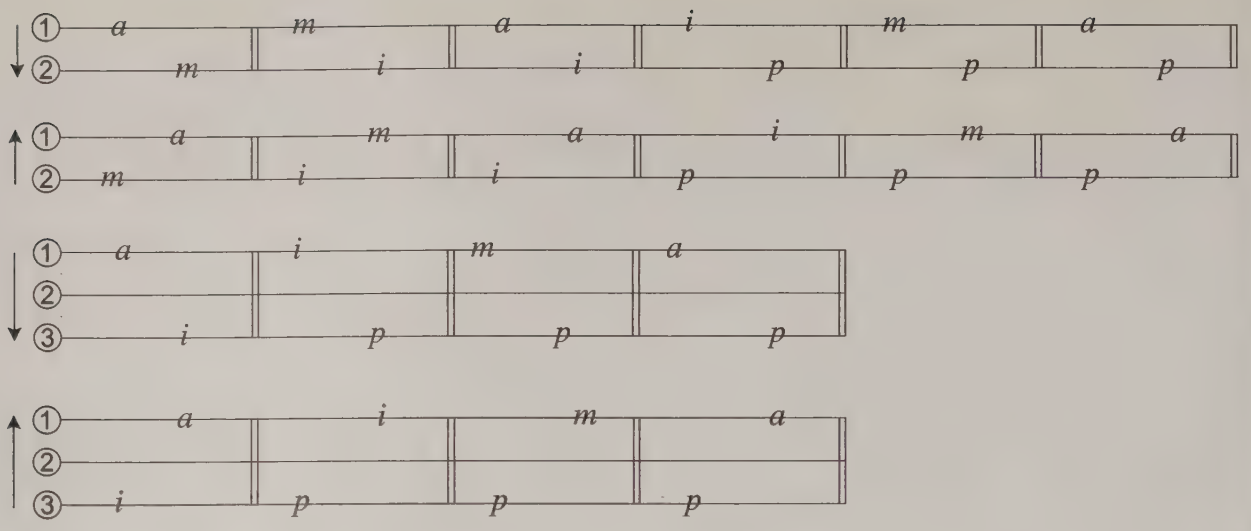
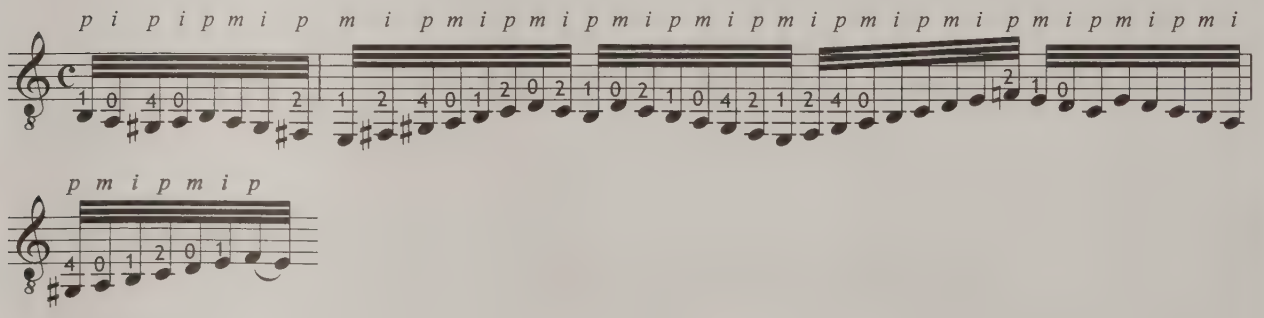


These simple rules cannot always be observed in practice. When crossing strings, finger combinations can arise that go against the natural string assignments of the fingers and as a result, have to be practiced intensively (see "String Crossing Exercises," p. 94).

2. Special Issues Regarding RH Fingerings on the Bass Strings

On the bass strings, you should use your middle and ring fingers less than your index finger, which, in alternation with the thumb **p-i**, is a substitute for alternate **m-i** or **a-i**. This is also suitable for faster passages. Alternate **m-i**, **m-a** or **i-a** on the bass strings does not occur very often. In this way you can keep the wear and tear on your nails to a minimum also because the nail noise using **p-i** is considerably less than the alternating patterns with your fingers.
In faster runs which begin on the bass strings or lead down to them, the RH finger pattern **p-m-i** should be used.

Example for p-m-i:
Bach, Chromatic Fantasy and Fugue in A Minor, BMV 903, Measure 22 to 24 (1st beat)
(Arr.: Käppel)



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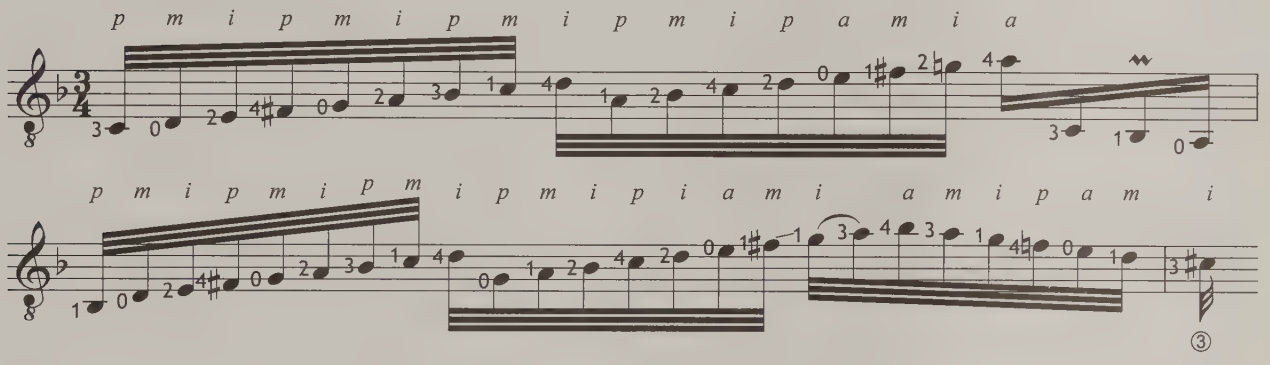
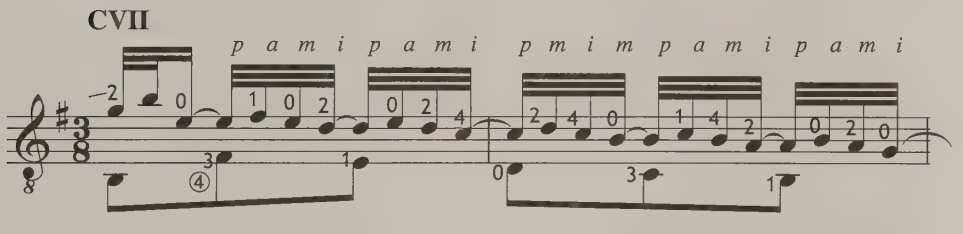
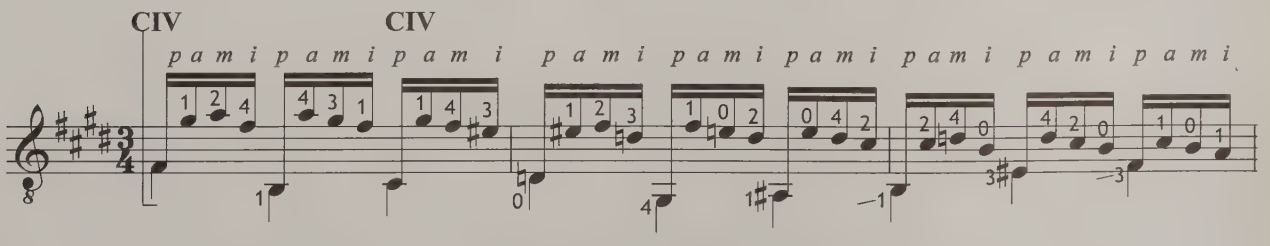
3. The Patterns p-m-i, a-m-i and p-a-m-i

Esepecially in fast passages, the patterns **p-m-i**, **a-m-i** and **p-a-m-i** are always to be preferred, on the one hand because a sequence of 3 or 4 fingers is always superior to alternating patterns with two fingers, and, on the other, because a finger sequence that progresses from the outside to the inside of the hand (towards the thumb) is easier to play. It's not by chance that a tremolo is performed by **p-a-m-i**. As already mentioned in No. 2 above, **p-m-i** tends to be used more on the bass strings while **a-m-i** is primarily employed on the treble strings. The pattern **p-a-m-i** is especially useful for polyphonic passages when the bass note, which is played by **p**, is sufficiently far away from the leading part (see examples 2 and 3). Ideal RH fingering solutions are most often a combination of the patterns presented here (see example 1).

Example 1, mostly with p-m-i:
Bach, 2nd Violin Partita in D Minor, BMV 1004, Chaconne, Measures 74–75 (Arr.: Käppel)

Example 2, p-a-m-i:
Bach, Corrente from the 6th Piano Partita in E Minor, BMV 830, Measures 110–111 (Arr.: Käppel)

Example 3, p-a-m-i:
Bach, Prelude from the 3rd Violin Partita in E Major, BMV 1006, Measures 110–111 (Arr.: Käppel)

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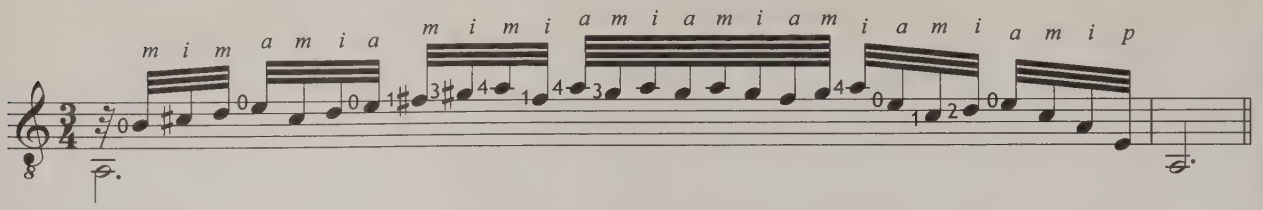
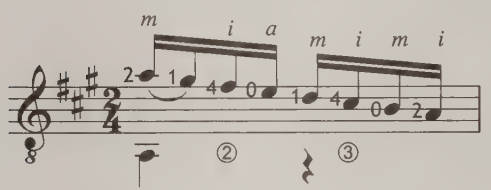
Example 4, a-m-i:
Dowland, The Earl of Essex His Galliard, Final Measures (extended to 2 bars) (Arr.: Käppel)

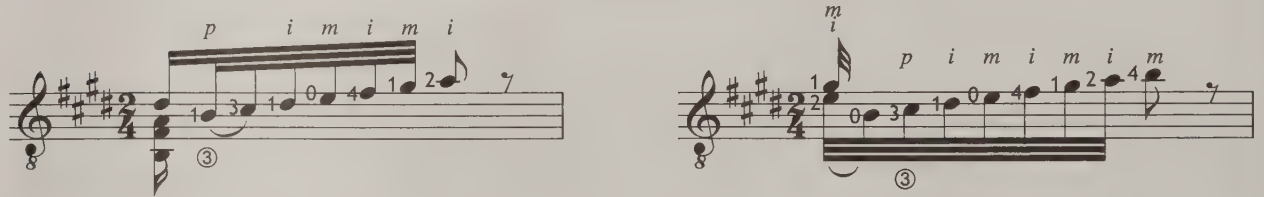


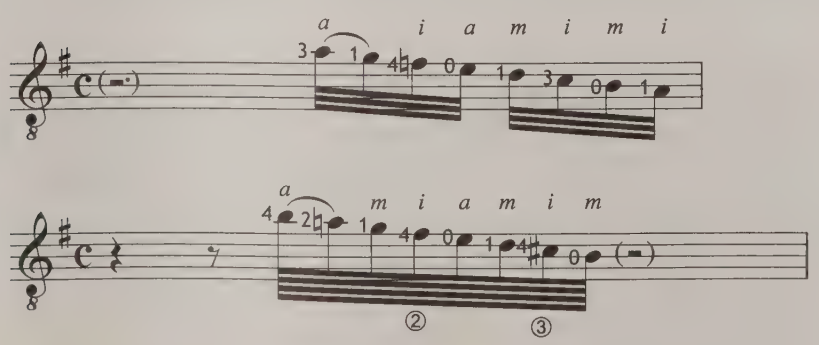
4. Arpeggio Patterns Applied to Scales

The use of RH arpeggio patterns can be found throughout the entire guitar repertoire. In this technique, an open string is used as a "link" within the run in order to get an arpeggio pattern. Many times it is only the use of LH slurs which allow you to maintain a RH arpeggio pattern. Compare the corresponding chapters: "Fingerings in the Left Hand," "The Open String in Scales," p. 221.

Example 1: Giuliani, Händel Variations op. 107, Variation VI, Measure 19



Example 2: Sor, Mozart Variations op. 9, Variation I, Measures 2 and 12

Example 3: Bach, Lute Suite in E Minor, BMV 996, Prelude, Measures 9 and 14 (Arr.: Käppel)



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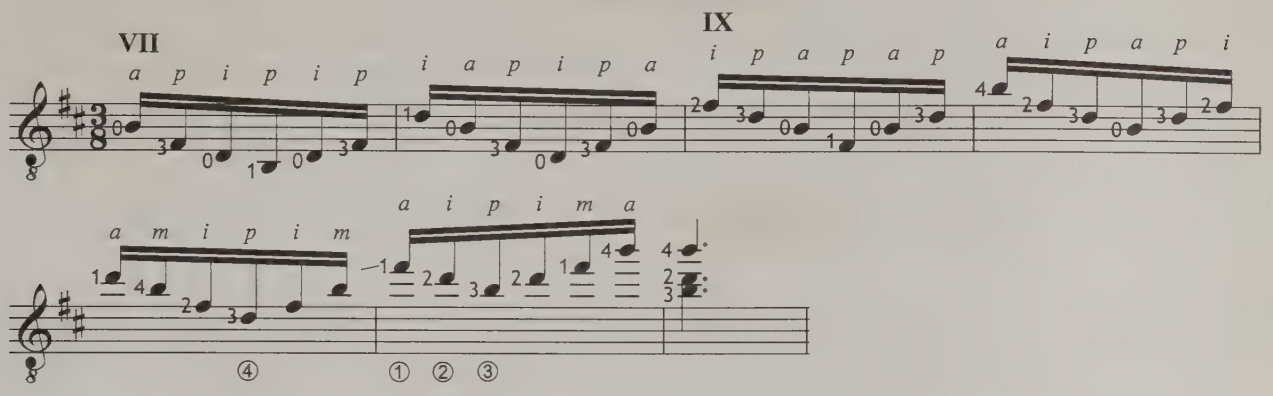
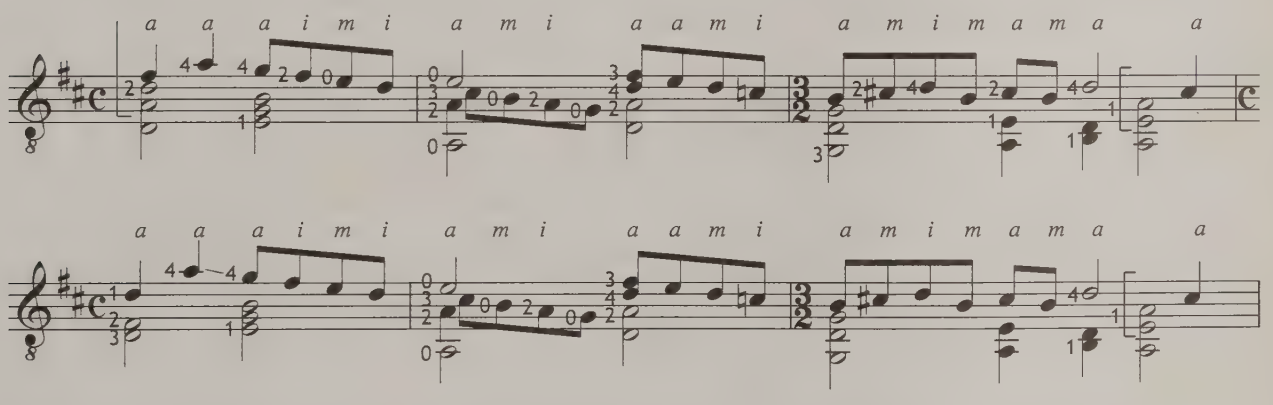
Example 4: Barrios, La Cathedral, Allegro solemne, Measures 117–123



5. Repeated Notes with a Single RH Finger

Successively repeated notes with the thumb at a moderate tempo are standard for any guitarist while repeated notes with fingers **a**, **m** or **i** are often avoided. If this does occur in your playing, it's often an unconscious habit. Being able to play notes with one and the same finger offers, however, many advantages – not only technically but in a musical respect as well.

In a vocal type passage, a "cantilena," repeated notes with the same finger allow you to maintain the same tonal color or to change between tonal colors in a smooth fashion. When transitioning from a single part to chords, you can't avoid repeating with the same finger. Clearly defined RH fingerings give you more self-assurance in your performance.

Example for Transitioning from a Single Part to Chords: Milan, Pavana 4, Measures 24–29

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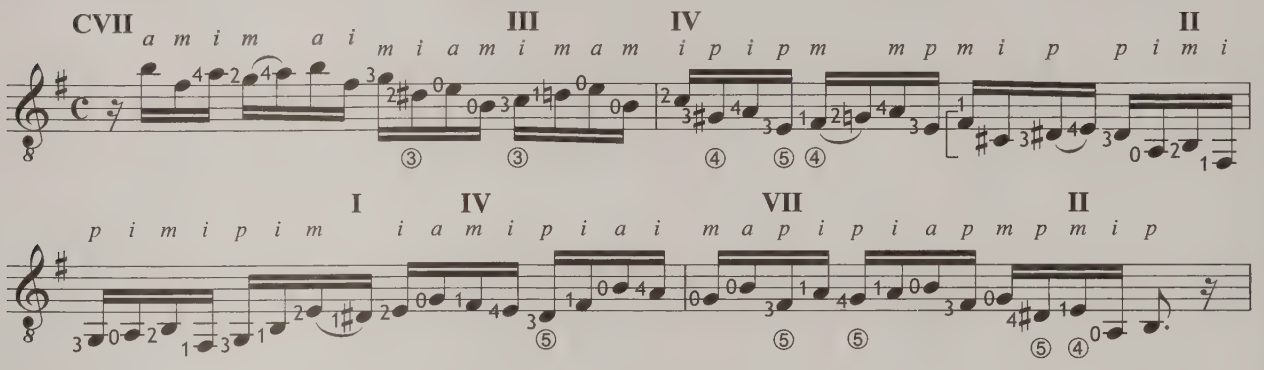
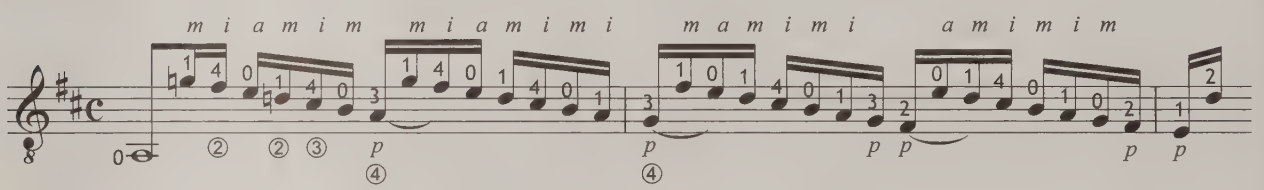
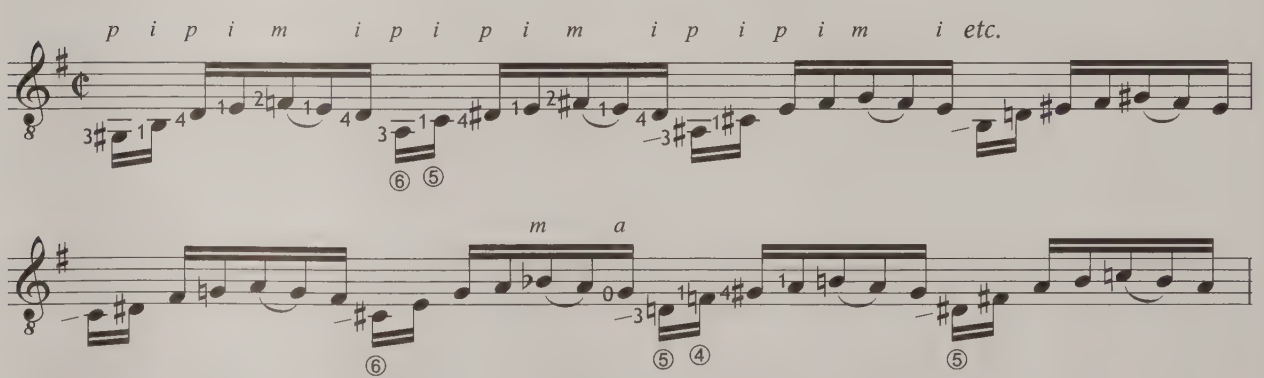
6. Combining Different RH Arpeggio Patterns

Combining different patterns is often the best solution when searching for the ideal RH fingering. Although the options are varied and diverse, you should – if possible – perform arpeggio patterns you use often.

Example 1: Bach, Lute Suite in E Minor, BMV 996, Prelude, Measures 1–4 (Arr.: Käppel)

Example 2: Bach, 1st Cello Suite in D Major, BMV 1007, Prelude, Measures 29–30 (Arr.: Käppel)
See " Left Hand Fingerings," p. 219 and "The Open String in Scales," p. 221.

Example 3: Bach, Toccata from the 6th Piano Partita in E Minor, BMV 830, Measures 18–19 (Arr.: Käppel)



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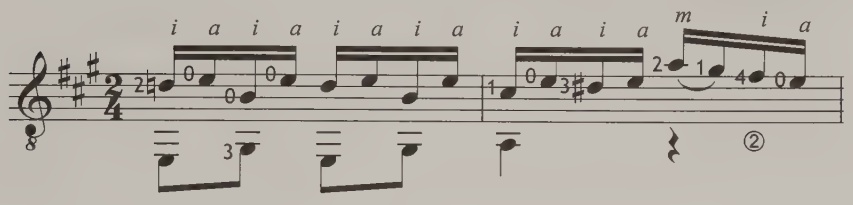
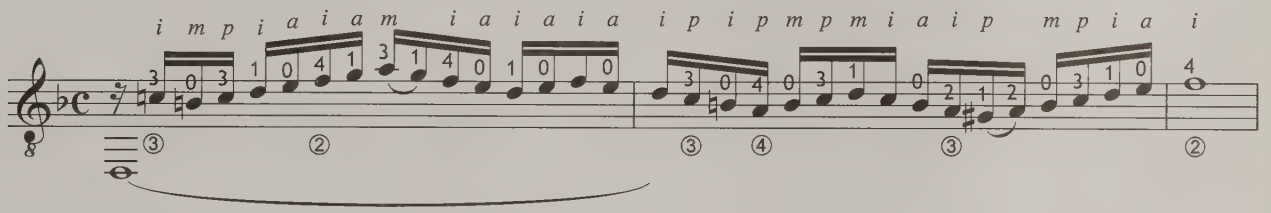
7. Using a-i on Neighboring Strings

During fast passages with string crossings between neighboring strings, the RH fingering **a-i** should be favored over the somewhat slower **m-i**, **a-i** can be performed more fluidly and in a more relaxed fashion.

Example 1: Giuliani, Händel Variations op. 107, Variation VI, Measures 19–20

Example 2: Kellner, Fantasy in D Minor, Measures 31–32 (Arr.: Käppel)

8. Special Issues when Using RH Fingerings in a Musical Context

In early music, for example in Bach, rhythm and meter play a large role. Also in classical music, certain rules and conventions of the Baroque period are applied, such as the accenting of primary beats within a measure. And thus, on primary beats, you should use your thumb and also your middle finger if possible. This allows the rhythmical structure to be naturally supported by the correspondingly stronger fingers of the hand.

Similarly, runs in lute and renaissance music can better achieve the desired heavy-light phrasing using **p-i** (Figeta) or **m-i** (using **p** or **m** on the 1st note of a four note group).

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II. Tuning the Guitar

Tuning the guitar is one of the most difficult tasks a guitarist faces and is a major challenge for your sense of hearing. Even after you've successfully completed tuning, the result is still a compromise in one way or another. Today there are excellent tuners, which, in many situations – for chamber music performances for example – are a tremendous help. But they cannot replaced a trained ear.
In order to tune the guitar, you have to be able to make quick decisions, i.e. after you've determined a pitch discrepancy between two strings, you have to make an immediate decision for one string regarding the direction in which the pitch is to be adjusted. To this end, the student should, beginning already with the first lessons, be made aware of pitch differences of one and the same note when played on different strings. The teacher needs to invest much patience and time to introduce the student to proper tuning. Several lessons have to be spent on this subject alone. Unfortunately, poor and imprecise tuning is common among students today. One reason is the too frequent and superficial use of tuners, another is that the true significance and importance of tuning is rarely acknowledged during instruction.
Topics such as mathematical/acoustical phenomenon, the overtone series or various tuning and tonal systems (i.e. the Pythagorean system, meantime tuning) are not discussed here.
The prerequisites for tuning are a good guitar with a suitable tuning machine head and a perfect fingerboard whose fret bars are inserted nowadays with the help of a precise, computer-guided template.
The frets are spaced so that **equal temperament** is achieved. i.e. an octave is divided up into 12 absolute identical half note steps. **With this type of tuning, it is only the octaves that are truly in tune!**
Furthermore, you should be aware of a special issue with the guitar: when you press down a string in front of a fret, you create higher tension on that string and are forced to extend your finger minimally to assume that position. As this has an adverse effect on the intonation of the string, the guitar maker has to – using an average 65 cm scale guitar as an example – add 2 mm to the scale to compensate for the inexactness of the intonation. Only after adding these 2 mm does the fingerboard sound in tune at each fret.

Simple Tuning by Comparing Neighboring Strings

Tuning the 5th string = A
Starting with the standard concert pitch a' 440 Hz which you produce by hitting a tuning fork on your thigh, you touch the A string at fret V and the same a' sounds, also 440 Hz, as a harmonic tone. Now compare the harmonic a' on the A string with the tuning fork a' and adjust it until it's identical with the tuning fork a'.

Tuning the 4th string = d
Now play the note d at fret V on the A string, compare it to the open d string and adjust it until both notes are identical.

Tuning the 3rd string = g
After that you play the note d at fret V on the d string, compare it to the open g string and adjust it until both notes are identical.

Tuning the 2nd string = b
Now play the note b at fret IV on the g string, compare it to the open b string and adjust it until both notes are identical.

Tuning the 1st string = e'
You follow the same procedure with the b string and play the note e' at fret V, compare it to the open high e' string and adjust it until both notes are identical.

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Tuning the 6th string = E
To tune the low E string, you have to touch the A string again – this time at fret VII – and you get the note e' (the same pitch as the open high e' string) as a harmonic tone, compare this with the same harmonic tone e' on the low E string which you get by touching the string at fret V, and then lastly adjust the low E string until both notes are identical.

This process results in a "rough," approximate tuning. The beginner can at least test his listening ability and try to differentiate between 2 notes of the same pitch. It is unsuitable and inappropriate for the advanced or professional player. Follow the remarks in the next section.

Tuning Using Harmonics and Octaves as an Aid

Tuning using harmonic tones as an aid is substantially more accurate although you have to take into account the fact that even this method is not a hundred percent precise. This can be compensated for by additionally fine tuning using octaves. Also chords, which can also lead to intonation problems when you internally compare their component notes, can be fine-tuned in this fashion so that a good compromise is the result.

To tune a guitar, you have to tune to a reference pitch, for example the harmonic tone a' 440 Hz, found on the A string. You then first tune the outer and then the inner strings:

5th and 1st string
5th and 6th string
5th and 2nd string
5th and 4th string
5th and 3rd string

Tuning the 5th string = A
Starting again with the standard concert pitch a' 440 Hz which you produce by hitting a tuning fork on your thigh, touch the A string at fret V and you get the same a', also 440 Hz, as a harmonic tone. Now compare the the harmonic tone from the A string with the tuning fork and adjust it until it's identical with the tuning fork a'.

Tuning the 1st string = e'
To tune the high e' string, touch the A string at fret VII to produce the note e' as a harmonic tone. This has the same pitch as the open e' string. Now compare it to the high e' string and adjust it until both notes are identical.

Tuning the 6th string = E
To tune the low E string, touch the A string again at fret VII to produce the note e' (the same pitch as the open e' string) as a harmonic tone. Compare this with the same harmonic tone on the low E string, produced by touching the string at fret V, and adjust the low E string until both notes are identical.

Tuning the 2nd string = b
To tune the b string, touch the A string again at fret VII to produce the note e' (the same pitch as the open e' string) as a harmonic tone. Compare this with the e' on the b string, played at fret V, and adjust the b string until both notes are identical.

Tuning the 4th string = d
To tune the d string, touch the A string at fret V to produce the tone a' (the same pitch as the the standard concert pitch a') as a harmonic tone. Compare this with harmonic tone a' on the d string, produced by touching the string at fret VII, and adjust the d string until both notes are identical.

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Tuning the 3rd string = g
The last string to be tuned is the g string. To do this, play the open A string and compare it to the a on the g string played at fret II and adjust it until the octave is in tune. In addition, compare the a on the g string with a further octave tone – a third note – the a' on the high e' string at fret V. If both octaves are in tune, then the guitar is relatively good in tune.

Special Issues Regarding the g String
For a variety of reasons, the g string is more difficult to tune than the other strings. As this string represents the transition from nylon to metal round wound bass strings, it has to be made of especially thick nylon material which can sometimes sound dull and lack overtones and thus cause an unclear aural impression. It is therefore advisable to play a g string made of carbon.
Likewise, due to frequent changes of harmony in common guitar keys – for example, the third in E minor, the fifth in C major or the fingered major third g♯ in E major – the g string can become a problem when you are tuning your guitar.

Comparing Octaves

The octave is the only interval that is "pure" regarding the equal tempered tuning on the guitar.
Although your guitar has already been tuned well with the help of harmonics, you should check your tuning one final time by comparing octaves and, if necessary, make corrections.
Octave comparisons are made using the following strings:

6th and 4th strings: = E on the low E string and e at fret II on the d string
6th and 3rd strings: = G on the E string at fret III and g, the open g string
5th and 3rd strings: = Open A string and a at fret II on the g string
5th and 2nd strings: = B at fret II on the A string and b, the open b string
4th and 2nd strings: = Open d string and d' at fret III on the b string
4th and 1st strings: = e at fret II on the d string and e', the open high e' string
3rd and 1st strings: = Open g string and g' at fret III on the high e' string

If, in the end, the chords E major and C major sound acceptably in tune in position I, then your tuning result is a good compromise. In many works there are chords or passages that tend to sound out of tune. Therefore you should examine every piece you play and identify passages with difficult intonation and, if applicable, adjust your guitar tuning to these passages and chords or, at least, check your intonation at these spots.

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III. Playing from Memory – Memory and Mental Training

Playing from Memory

Playing from memory is not only important for performing guitarists, the young guitarist studying at a music school or with a private teacher should also perform pieces from memory. This way you can control your sequence of movements better and your musical presentation can be performed more freely. The earlier you are taught techniques for playing from memory, the more successful you will be when you take the step and begin to conciously play from memory. Many reference books from the well-known musical method literature feature sections which discuss the problems encountered when memorizing and outline the differnt types of memories. As learning by memory not only applies to musicians, there is, beyond the available musicologically oriented literature, a collection of further writings which discuss this topic. This subject can only receive inroductory treatment with a focus on practical application here.

Memory Training

Associating Different Areas of Memory

To perform a work publically and from memory – including any stage fright you might have – you have to employ several differnt methods of memorization. By combining these different approaches and areas of memory which are used to learn a piece by heart (one can speak of different of memory "types" here), the memorized material is secured from several different sides. For example: you memorize the music and in addition – from a purely visual perspective – also the sequence of motions on the fingerboard, then the fingerings, the structural and formal aspects of the work and the individual measures according to their harmonic progressions. When you memorize the same spot in a piece from each of these different perspectives, it will be there to draw upon even when you are under stress and one of these memory areas blacks out. What follows is a discussion of the different areas of your memory which makes no claim to being comprehensive or complete.

The Motoric Memory

The motoric memory functions unconciously. Through the constant repition of phrases, measures, difficult passages or other elements, sequences of motion become automated. You can then simply call up these sequences without exercising concious control, assuming that the initial practicing and repeating occurred when you were in an attentive and concious state. Please refer to the chapter "I. Short Introduction to Systematic Practicing," p. 12. The motoric memory switches on immediately when you encounter fast and difficult passages. It engages often when a different memory area fails and can therefore be a big help to a perfomer in an emergency situation during a performance. However, it is quite vulnerable during slower passages and should therefore be supplemented by one or more memory areas in order to guarantee success.

The Cognitive Memory

You store rational, general perspectives in your cognitive memory. This includes formal and harmonic analyses, harmonic progressions – chords or chord symbols for the guitarist – intervals and, of course, individual notes. In addition, large-size forms such as sonata, the construction of fugues and fugue-oriented passages, changes in meter, the number of mesasures in a work or dynamic markings are stored here. Your cognitive memory can be used to support your motoric memory. The ultimate proof that you have learned a piece perfectly by heart is your ability to write it down from memory including all the dynamic markings and fingerings – a painstaking, yet very rewarding process.

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The Visual Memory

With most people, the visual memory is the most highly developed one. It consists of the written music and all the details that you have added as well as the sequence of movements in the LH on the fingerboard. This is the way to easily learn LH fingerings by heart without having to refer to the written music. It is also helpful as an additional memory aid for conspicuous shifts, fingerings and chords.

The Musical/Emotional Memory

An area to which too little importance is attached is the memory responsible for interpretation and expression. It is here that, among other things, dynamic sequences and differences, tonal colors, rhythmical precision, which can be expressed in a flexible feeling for certain measures for example, all agogic changes in tempo, i.e. all musical parameters and their accompanying emotional "side effects" are stored. If a work is memorized along with these musical parameters and the accompanying deep, emotional sensations, the memorized material will always be more readily available to perform. Especially if each and every nuance of the dynamics are incorporated into the memorizing process, the piece will become deeply engraved in your memory.

Comment: The pure auditory memory belongs to this memory area. You hear – without playing the instrument – melodies, chords and you know the entire form of the musical piece. If your motoric memory fails you for example, i.e. you experience a total blackout, your auditory memory can continue and "sing" the piece, i.e. your inner ear hears the continuation, but, in this case, it is only other memory areas that can actually help.

Different Memory Training Methods

To memorize a work and securely have it under your belt, you have to use different methods of memory training. Here are two examples:

Play Through It Very Slowly

Besides notating a work on paper, the best practical way to train your memory is to play through the piece extremely slowly, i.e. at a "slow motion" tempo. Especially with works that have repetitive forms – in Bach, for example – this method is appropriate and promises the greatest degree of success.

Example: Bach, Fugue in D Major (originally Eb Major), BWV 998, Middle Section
Starting with the basic meter quarter note = 63 BPM, the 16ths in the middle section are performed approximately four times slower, i.e. **ONE 16th Note = BPM 60.**

At this extremely slow tempo, you now play the fugue in the middle section which almost consists of 16th note passages exclusively, without music. During your first attempt, it could be that there are a few places that you haven't memorized completely yet. Here you have to refer back to the written music. The second or third time however, you will be able to play the entire middle section from memory at this "snail-like" tempo. Using this method, you can also work through the exposition of the fugue as well. The length of one quarter note should be, again, 4 strokes of the metronome, i.e. BPM = 60.

Mnemonic Reference Points

You can further solidify a memorized work in your mind by working with mnemonic reference points. To accomplish this, look for as many noticeable, principle reference points in a work as possible which are located more or less equidistant from each other. These are then numbered and you are to play through them **from memory** in the following fashion: begin at the end and proceed chronologically back to the beginning.

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Example: Bach, Prelude in D Major (originally E♭ Major), BWV 998
To illustrate this principle better, in this Bach Prelude the reference points will be set measure-wise. (Of course you can add additional reference points if you'd like!)
48 measures result in 48 reference points.
You start with reference point 46 and continue through 47 to the end; playing it through three times in total has emerged as the most effective and successful method.
Then you start at reference point 45 and continue through 46 and 47 to the end again.
Then you start at reference point 44 and continue through 45 and 46, stoppping at 47.
Then you start at reference point 43 and continue through 44 and 45, stoppping at 46.
Then, at reference point 42, continue through 43 and 44 and stop at 45 and so forth!

Following this admittedly strenuous and time-consuming method, after a certain amount of time you will arrive at the beginning of the piece. If your concentration starts to wane at some point, definitely take a break. Although this method of securing a memorized piece in your mind seems very tedious at the outset, it is supremely promising and convincing by the invaluable sense of self-assurance it provides when playing the piece from memory.

Mental Training

For instrumentalists, doing mental training without the instrument has gained in importance in recent years. Mental training is something that has been conducted in sports and sports medicine for quite some time as, in some sports, extensive training is impossible and possibly even harmful.
Practicing without an instrument is suitable for guitarists regarding works they have studied and know intimately. Entire movements and pieces, including all the necessary sequences of movements and fingerings for both hands, can be played through in your mind. For this to work however, the piece has to be prepared perfectly, both musically and technically. This type of "in mind preparation" should occur at the very end of the study phase of a work. Shortly before a performance – and especially on the day of a performance – this type of training is to be strictly avoided. Suddenly and easily, minor memory lapses can occur and cause unnecessary panic before the performance.

A further important mental method is reading the score without your instrument. While reading you are to go through the movements of both hands including the fingerings in your mind. The tempo should be somewhat slower than the actual tempo. You can also "play through" difficult passages several times. In this manner, you go easy on your hands and fingers for one thing, while, at the same time, this type of practicing demands more concentration than if you were practicing with your instrument.
At this time there is an area of piano pedagogy that is experimenting with young as well as university music students to learn sequences of movement without the instrument, similar to the mental traning of athletes. But in contrast to the athletes, instrumentalists have the added element of sound which, without an instrument, has to be imagined in the inner ear. This is easier to realize with a piano which has only a single key for each note. The guitar however, on which there are 3, 4 or even 5 options for playing the same note on different strings offering varying tonal colors, is limited when it comes to these types of experiments. Due to the many tonal possibilities that inevitably arise based on the various available fingerings, the instrument has to be integrated into the process of learning a new piece so you are on the safe side when you work on its tonal development, i.e. how it should sound when it's performed.

Also, the well-known "Leimer-Gieseking" method, which described the mental rehearsing of a composition without the instrument as far back as the 1930s, is unsuitable for guitarists for the same reasons mentioned above.

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IV. Stage Fright and Fear of Performing

The topic of stage fright stopped being a taboo quite a while ago. A primary indicator of this is the literature that has been published in recent years. The subject can only be touched upon here due to lack of space. Interested players will find reference sources listed at the end of the book.
Stage fright is a normal phenomenon for every musician. First and foremost, it should provide you with increased efficiency in your performance. If it gets out of hand, however, and leads to an impairment in your playing, a healthy case of stage fright will just turn into a fear of performing, a phenomenon that is wide-spread and which can lead to the abandonment of a career for some musicians. One of the most famous musicians of the 20th century, the cellist Pablo Cassals, is often quoted as he openly admitted that he suffered from an extreme form of stage fright.
Drawing the boundary between healthy stage fright and a fear of performing is nearly impossible. Every player who has experienced a diverse number of public performances knows that the actual degree of stage fright can vary. It depends on, among other things, the audience, the importance of the performance, the amount of calm experienced before the performance, your personal condition on a particular day and the degree of your technical and musical preparation. Many musicians are also famliar with the transitional phase between stage fright and actual fear of performance. As the problem is a very individual one, it's up to the individual himself to search for the causes of his decline in performance and to try and find solutions and – if necessary – to look for therapeutic measures to improve the situation.
The following suggestions and directions are based on years of experience teaching at a university level and can help you reduce your stage fright.
Moreover, they should also provide you with the impulse to delve into the problem of stage fright more intensely.

1. What It Means to Intensively Prepare Yourself for a Public Performance

One of the causes of experiencing a strong sense of stage fright is the fact that music education – from the very outset – is interconnected to a technically perfect reproduction of the music. You are "trained" to play technically perfect. This means that often too much importance is attached to the technical aspects of your performance and that the musical aspects – which serve to please your listeners – are forgotten. Another root cause is the enormous pressure to achieve in our society: due to the permanent and instant access of all available media, every musician or music student is constantly compared to the world's best muscians. The violinist Kato Havas wrote presciently in 1973: "The entire world of music suffers from a plague of exagerrated performance expectations."
Hence, besides proper technical preparation and technical mastering of difficult passages, your focus should be on a musically coherent interpretation which should, to a great degree, be driven by your own ideas or at least be strongly internalized on your part.
Audio recordings can help you intensify the technical as well as musical and interpretative aspects of your preparation for a concert or public performance. Good preparation can provide you with a sense of calm and boost your self-confidence. At the same time, you shouldn't have too heightened expectations on yourself. Before the performance you can say to yourself: ***I have done everything to the very best of my ability. I will try to focus on the music and even accept any mistakes that might result from it!***

2. Giving Regular Performances – Performance Training

The most important form of preparation is to perform regularly. This can be in front of people who have the same interests whom you meet with weekly and – in the best case under someone's supervision – play for each other in turn. This is easy to realize with professional music students, but you can also organize regular, audition-like performance situations as a private group without much effort at all. What's important is that you meet at least once week (for example, "Performance Training" has been a fixed part of the curriculum at the "Koblenz International Guitar Academy" for years; some music schools in Germany offer a "Performance Training" as a permanent subject in their course of instruction).

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Furthermore, you should take advantage of any and every type of opportunity to play in public. These include performances in nursing homes, youth centers, hospitals, rehab clinics, religious facilities, exhibition openings and private events etc. Audio recordings can also play a supportive role in your performance training. Microphones make some musicians nervous. Perfoming in front of a microphone that records absolutely everything – maybe even your heavy breathing or gasping – cannot of course replace your interaction with an audience, but it can be tremendously helpful as a substitute for playing in front of people. Your imagination in creating potential performance situations in which you can practice should know no limits.

3. Your Inner Attitude or "Confront Stage Fright with Courage"

"Mut zum Lampenfieber" (in English loosely "Confront Stage Fright with Courage") is the title of a book published in 2008 by the German cellist and author Gerhard Mantel. With his call to confront stage fright with courage, Mantel hits the nail on the head! The first step is to accept stage fright as an inevitable part of playing a public performance. This acceptance should lead to the additional motivation and a joyous anticipation of the performance: Applying certain mental strategies, the "nervous" energy that accompanies stage fright is transformed into concentration and joy of playing. Relaxation techniques – discussed in the next section – can also be helpful here.

4. Relaxation Techniques

Extreme stage fright is always accompanied by a negative tensing up of the muscles. Therefore, relaxation techniques won't just help you to perform the correct sequence of movements while playing, but rather also to reduce any unnecessary tension both before and during your performance on stage. By now, an abundance of relaxation techniques have been developed that have become fashionable in recent years. But this doesn't make it easy for the individual to find the proper method that fits to his person.

The most well-known methods are: Autogenic Training, Alexander Technique, Feldenkrais Method, Dispokinesis, Yoga and Tai-Chi. Beyond these, there are also other medically-oriented breathing and muscle relaxation techniques.

Experience has shown that it doesn't really matter which method you choose. Simply addressing the "tension – release" issue contributes positively to controlling stage fright amongst many guitarists who suffer from the fear of performing.

5. Prevention Through Concious Mnemonic Training

Time after time I hear about musicians who are afraid of having a memory lapse and are thereby shaken by wave-like attacks of extreme stage fright during a performance. The loss of control in such cases can be so extensive that a memory block is created which then leads to further memory lapses as a result and ultimately ends in circulus vitiosus. In such cases, concious memory training is the only thing that can help (see page 238). This includes playing very slowly from memory, mentally playing by heart without the instrument and the memorizing of memory-supporting reference points (or memory points). The securing of a work through the use of different methods of memorization will give you more self-assurance. If a small blackout does however occur, it can be cleverly covered up by skipping a few notes or even bars. You should be aware that not even a virtuoso is immune to blackouts – it has happened to everyone at one point or another and is a normal part of performing or making a presentation.

See chapter "III. Playing from Memory – Memory and Mental Training," p. 233 for more.

6. The Selection of Your Individual Repertoire

Most guitarists want to play Bach and thus they expect too much from themselves. Aside from not preparing the piece in its entirety and the problems involved in developing a coherent interpretation, they are not up to the extreme technical demands required by the piece. The result is a "nervous" performance full of technical mistakes and memory laps including attacks of stage fright.

This is only one example of the wrong choice of repertoire. Sometimes it takes years until you find the appropriate and suitable repertoire for yourself. When you finally accept the fact that only a certain and even limited choice of repertoire is right for you and you are able to create your programs accordingly, a public performance can be carried out with a high sense of self-assurance and distinctly less stage fright.

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V. Technical Practice Guides for Daily Practicing

It's difficult to indicate the exact practice times for each individual exercise in the following technical practice guide examples as that time depends on how fast you learn, your technical level and your talent in general. Therefore, the times listed here are only approximate indications. They should serve to help the student orient himself when he's dividing up his practice time and should be shortened **at the first sign of overexertion, or extended if a greater need for a specific type of exercise arises. So please don't forget: it's not about the amount of time you practice; it's about the quality and effectiveness of your practice time!**
In order to highlight the many possibilties available for modifying an exercise, some of the following exercises are depicted differently than they were in the individual chapters. This should encourage the guitarists to, for example, limit the scope of the exercises, expand upon them or freely combine them with each other. Your creativity should know no limits here.

Short Technical Practice Guide – about 45 Minutes

Example 1

Contents		Page	Approx. Time
1.	ARPEGGIOS, (TIP) A5: 12 Basic Arpeggios, Patterns 1–6, 2 minutes per pattern	62	12 minutes
2.	LH-RH COORDINATION, No. 5a) (TIP) with **i-m** and the chromatic scale on the 2nd and 3rd strings	92	2–3 minutes
3.	LH SLURS, Combining Two Note Slurs, No. 3 using 1-2, 2-1, 2-3, 3-2, 3-4, 4-3	140	6–7 minutes
4. a)	SCALES, Five Short Exercises for Scales (TIP), No. 5 from position IV–IX with alternate **i-m**	124	2 minutes
b)	SCALES, Five Short Exercises for Scales (TIP), No. 6 from position I–VII with alternate **i-m**	124	2 minutes
c)	SCALES, Five Short Exercises for Scales (TIP), No. 7 from position I–V with alternate **m-a**	124	2 minutes
5.	LH SLURS, Combining Two Note Slurs, No. 3 with 1-3, 3-1, 2-4, 4-2, 1-4, 4-1	140	6–7 minutes
6.	ARPEGGIOS, (TIP) A5: 12 Basic Arpeggios, Patterns 7–12, 2 minutes per pattern	62	12 minutes

Example 2

Contents		Page	Approx. Time
1.	ARPEGGIOS, A2: 6 Basic Arpeggios Expanded to 24, Patterns 1–3	55	15 minutes
2.	SCALES, Preparatory Exercises for Scales and Runs, No. 1a) and d) from position I–IX–I	115	3 minutes
3.	SCALES, Preparatory Exercises for Scales and Runs, No. 2d) and i) from position I–IX–I	117	3 minutes
4.	ARPEGGIOS, A2: 6 Basic Arpeggios Expanded to 24, Patterns 4–6	55	15 minutes

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5.	LH SLURS, Two Note Slur Combinations While Crossing Strings, (TIP) No. 9a)–f) from position I–IV	144	6 minutes
6.	SCALES, Preparatory Exercises for Scales and Runs, No. 3f) and k) from position I–IX–I	118	3 minutes

Example 3

Contents		Page	Approx. Time
1.	ARPEGGIOS, (TIP) A6: 12 Basic Arpeggios with Polyrhythms, Patterns 1–6, 1.5 minutes per pattern	64	9 minutes
2.	LH SLURS, Slurs with Three Fingers, Diatonic Group 1, No. 11a)–f) with 1–2–4 from position I–III–I	146	7 minutes
3.	LH-RH COORDINATION, (TIP) No. 37a)–f) from position I-V with **m-i**, 1.5 minutes per finger combination	104	9 minutes
4.	BARRE Exercises, Barre Exercise According to Llobet, No. 23 (TIP)	187	4 minutes
5.	ARPEGGIOS, (TIP) A6: 12 Basic Arpeggios with Polyrhythms, Patterns 7–12, 1.5 minutes per pattern	64	9 minutes
6.	LH SLURS, Slurs with Three Fingers, Diatonic Group 2, No. 12a)–f) with 1-3-4 from position I–III–I	146	7 minutes

Compact Technical Practice Guide – about 90 Minutes

Example 1

Contents		Page	Approx. Time
1.	ARPEGGIOS, (TIP) A5: 12 Basic Arpeggios, 2nd Variation, Patterns 1–6, 2 minutes per pattern	63	12 minutes
2.	LH-RH COORDINATION, No. 28 (TIP) and 29 (TIP) with **a-m**, from the 1st to 6th string and back, repeat 3× on each string	100	6 minutes
3.	LH SLURS, Two Note Slur Combinations as Triplets While Crossing Strings (TIP), No. 10a) and b) from position I–V	144	4–5 minutes
4. a)	SCALES, Five Short Exercises for Scales (TIP), No. 5 from position IV–XII with alternate **i-m**, repeat each position 4×	124	3 minutes
b)	SCALES, Five Short Exercises for Scales (TIP), No. 6 from position I–XI with alternate **i-m**, repeat each position 4×	124	3 minutes
c)	SCALES, Five Short Exercises for Scales (TIP), No. 7 from position I–XI with alternate **m-a**, repeat each position 4×	124	3,5 minutes
d)	SCALES, Five Short Exercises for Scales (TIP), No. 8 from position I–VII with alternate **i-m**, repeat each position 4×	124	2 minutes
e)	SCALES, Five Short Exercises for Scales (TIP), No. 9 from position II–XII with alternate **m-a**, repeat each position 4×	124	3 minutes
5.	LH SLURS, Two Note Slur Combinations as Triplets While Crossing Strings (TIP), No. 10c) and d) from position I–V	145	4–5 minutes
6.	ARPEGGIOS, (TIP) A5: 12 Basic Arpeggios, 2nd Variation, Patterns 7–12, 2 minutes per pattern	63	12 minutes

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7.	LH SLURS, Two Note Slur Combinations as Triplets While Crossing Strings (TIP), No. 10e) and f) from position I–V	145	4–5 minutes
8.	ARPEGGIOS, (TIP) A12: Variations of the 12 Basic Arpeggios on Three Strings, No. 1, approx. 1 minute per pattern	71	12 minutes
9.	SHIFT EXERCISES, Direct Shift Exercises from "Supplementary Technical Exercises for the LH," No. 6a)–f), repeat each pattern 4× (approx. 1 minute)	175	6 minutes
10.	LH INDEPENDENCE, from "Supplementary Technical Exercises for the Left Hand," No. 14a), b), e), f), l) and m) from position I–VII on the 1st and 2nd strings, repeat each exercise 3× (approx. 1 minute)	180	6 minutes
11.	ARPEGGIOS, A12: 24 Eighth Note Arpeggios, Patterns Nos. 1, 3, 7, 9 and 12 with the Chromatic Scale of Thirds (p. 53), 1.5 minutes per pattern	70	7–8 minutes

Example 2

Contents		Page	Approx. Time
1.	ARPEGGIOS, (TIP) A6: 12 Basic Arpeggios with Polyrhythms, Open Strings Alternating with the Chromatic Scale of Thirds (p. 53), 1.5 minutes per pattern	64	18 minutes
2.	LH-RH COORDINATION, No. 37a)–f) (TIP) with **a-m** and **a-i**, from position I–VII, repeat each position 1× (approx. 2.5 minutes)	104	15 minutes
3.	LH SLURS, No. 14a), Slurs with Three Fingers Divided into Four Note Groups, with 1-2-4 from position I–III, repeat each position 1× (approx. 1.5 minutes per combination)	148	13–14 minutes
4.	SCALES, from "Scale Practicing Models in the Circle of Fifths" Model No. 2, 24 Scales with Repetitions, repeat each scale 2×	133	24 minutes
5. a)	SCALES, Five Short Exercises for Scales (TIP), No. 8 from position I–VII with alternate **i-m**, repeat each position 4×	124	2 minutes
b)	SCALES, Five Short Exercises for Scales (TIP), No. 9 from position II–XII with alternate **m-a**, repeat each position 4×	124	3 minutes
6.	LH SLURS, No. 14b), Slurs with Three Fingers Divided into Four Note Groups with 1-3-4 from position I–III, repeat each position 1× (approx. 1.5 minutes per combination)	148	13–14 minutes

Example 3

Contents		Page	Approx. Time
1.	ARPEGGIOS, A11: 24 Eighth Note Arpeggios, Patterns No. 1–12 with the Chromatic Scale of Thirds (p. 53), 1.5 minutes per pattern	70	18 minutes

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2.	SCALES, from "Scale Practicing Models in the Circle of Fifths," (TIP) Model No. 3: with **p-m-i** in Four Note Groups, 12 Scales from C Major to G♯ Minor, during 2 passes with **p-m-i** each scale is repeated 6×	134	9–10 minutes
3.	ARPEGGIOS, A8: Important Two-Part Arpeggios, Nos. 1–10, Open Strings Alternating with the Chromatic Scale of Thirds (p. 53), 1.5 minutes per pattern	65	15 minutes
4.	SCALES, from "Scale Practicing Models in the Circle of Fifths," (TIP) Model No. 3: with **a-m-i** in Four Note Groups, 12 Scales from F♯ Major to D Minor, during 2 passes with **a-m-i** each scale is repeated 6×	134	9–10 minutes
5.	LH SLURS, No. 5, Complex Two Note Slurs as Triplets, from position I–V, repeat each position 1×	142	13–14 minutes
6.	RASGUEADO Technique on open strings		
	Nr. 4a)	170	3 minutes
	Nr. 4b)	170	2 minutes
	Nr. 4c)	170	3 minutes
	Nr. 4d)	170	2 minutes
7.	LH INDEPENDENCE, from "Supplementary Technical Exercises for the Left Hand," No. 14a)–d) from position I–VII on the 1st and 2nd strings, repeat each exercise 4× (approx. 1 minute)	180	4–6 minutes
8. a)	TREMOLO Exercises on Various Strings, No. 11a)–d) on open strings, 1.5 minutes per exercise	167	6 minutes
b)	TREMOLO Exercises on One String, No. 3a)–d) using very short staccato playing on open strings (see p. 161, "General Practicing Methods and Aids," No. 1)	164	3–4 minutes

Intensive Technical Practice Guide – about 3 Hours

Caution! Regarding the following technical practice guides, it's necessary that you incorporate breaks into your routine. During practicing, your can slightly overexert your hands and potentially damage them in the longer term. At the first and even slightest sign of overexertion of your muscles, tendons and joints, you should stop practicing IMMEDIATELY regardless of where you are in the lesson plan.

Example 1

Contents		Page	Approx. Time
1.	ARPEGGIOS, (TIP) A12: Variations of the 12 Basic Arpeggios on Three Strings, Nos. 1 and 2 with the Chromatic Scale of Thirds (p. 53), 1 minute per pattern	71	24 minutes
2.	SCALES, from "Scale Practicing Models in the Circle of Fifths," (TIP) No. 4: The Practicing Model of the 12 Basic Arpeggios (Excluding the Thumb), play through the first circle of fifths completely, second pass from C major to G♯ Minor, repeat each scale 4×	135	18 minutes
3.	ARPEGGIOS, (TIP) A18: Basic Arpeggios with Difficult String Crossings, Nos. 1–9 with Six Part Chord Patterns (p. 53), 2 minutes per pattern	80	18 minutes

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4.	SCALES, from "Scale Practicing Models in the Circle of Fifths," Model No. 4: The Practicing Model of the 12 Basic Arpeggios (Excluding the Thumb) (TIP), second pass from F♯ Major to D Minor, third pass through the complete circle of fifths, repeat each scale 4×	135	18 minutes
5.	TREMOLO, No. 6a)–h), 2 minutes per each rhythmical figure	165	16 minutes
6.	LH SLURS, No. 14c), Slurs with Three Fingers Divided into Four Note Groups with 1-2-3 from position I–III, repeat each position 1× (approx. 1.5 minutes)	148	13–14 minutes
7.	RASGUEADO using your thumb and fingers		
	Nr. 6a)	171	1,5 minutes
	Nr. 6b)	171	3 minutes
	Nr. 6c)	172	1,5 minutes
8.	ARPEGGIOS, A21 Arpeggios with Thumb Accompaniment to Strengthen Your Attack with the Chromatic Scale of Thirds (p. 53), approx. 1 minute per pattern	84	12 minutes
9.	LH-RH COORDINATION, No. 41, 6 Finger Combinations beginning with 1, and 6 beginning with 2, RH with **a-i, i-a** from position I–IX–I on the 2nd and 3rd strings, repeat each position 4× (approx. 2 minutes per combination)	108	24 minutes
10. a)	LH INDEPENDENCE, "Independence Exercises for the Left Hand," No. 15a)–b) from position I–V, on the 1st and 4th strings as indicated	183	3–4 minutes
b)	ARPEGGIOS, A7: Arpeggios with **p-i, p-m, p-a** No. 1–4, 1 minute per pattern	64	4 minutes
c)	LH INDEPENDENCE, "Independence Exercises for the Left Hand," (TIP) No. 16a)–d) from position I–V on the 1st and 4th strings as indicated	184	4–6 minutes
d)	ARPEGGIOS, A7: Arpeggios with **p-i, p-m, p-a** No. 5–8, 1 minute per pattern	64	4 minutes
e)	LH INDEPENDENCE, "Independence Exercises for the Left Hand," No. 15e)–f) from position I–V on the 1st and 4th strings as indicated	183	3–4 minutes
f)	ARPEGGIOS, A7: Arpeggios with **p-i, p-m, p-a** No. 9–12, 1 minute per pattern	64	4 minutes
11. a)	STRETCHING Exercises for the LH, from "Supplementary Technical Exercises for the LH," No. 25	187	2 minutes
b)	BARRE Exercises, from "Supplementary Technical Exercises for the LH," No. 22	186	2 minutes
c)	STRETCHING Exercises for the LH, from "Supplementary Technical Exercises for the LH," No. 26	188	2 minutes

Example 2

Contents		Page	Approx. Time
1.	ARPEGGIOS, (TIP) A5: 2nd Variation with Eighth Note Bass Notes and the Chromatic Scale of Thirds (p. 53), 2 minutes per pattern	63	24 minutes

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2.	2. ARPEGGIOS, A7: Arpeggios with **p-i**, **p-m**, **p-a** No. 1–12, 1.5 minutes per pattern	64	18 minutes
3.	SCALES, Scales in Triplets with Three Finger Patterns **a-m-i** and **p-m-i**, No. 20 (over 2 octaves) and 21 (over 3 octaves) from C Major to B Minor with **p-m-i**, **m-i-p** and **i-p-m**, repeat each pattern at least 1×, corresponds to 18 or more passes at each scale	131	22–25 minutes
4.	SCALES, Scales in Small Note Groups, No. 14, 15 and 16 with G Major	128	9–10 minutes
5. a)	LH SLURS, Slurs with Fixed Fingers, No. 29a)–d) from the 1st–4th strings, from position I–III, 1 minute per combination	156	4 minutes
b)	LH SLURS, Ascending and Descending Slurs as an Embellishment, No. 19, repeat each group 4× from the 1st–6th strings, 30 seconds per group	151	4 minutes
c)	LH SLURS, Slurs with Fixed Fingers, No. 29e)–h) from the 1st–4th strings, from I–III, 1 minute per combination	156	4 minutes
d)	LH SLURS, Chromatic Scale with Slurs, No. 22a) alternating between slow – fast	153	2 minutes
e)	LH SLURS, Slurs with Fixed Fingers, No. 29i)–m) from the 1st–4th strings, from position I–III, 1 minute per combination	156	4 minutes
6.	ARPEGGIOS, (TIP) A10: 36 Six Note Arpeggios, Practice the 1st group with two different accents, alternating with open Strings and the Chromatic Scale of Thirds (p. 53), approx. 2 minutes per pattern	67	24 minutes
7. a)	PRACTICING PLAYING FAST p. 206, with Exercise 5a) (TIP) in the chapter "Coordination of the Left and Right Hands" alternate **m-i**	92	2 minutes
b)	ACHIEVING SPEED by playing with the outside of the nail, No. 2 with **m-i**, repeat each note 4× with the scales C Major, A Minor, G Major, the same with **i-m** in E Minor, D Major and A Minor	207	7–8 minutes
8.	SCALES, from "Scale Practicing Models in the Circle of Fifths," No. 4: The Practice Model of the 12 Basic Arpeggios (Excluding the Thumb) (TIP), first pass through the complete circle of fifths, second pass from C Major to G♯ Minor repeat each scale 4×	135	18–20 minutes
9.	LH SLURS, Two Note Slur Combinations While Crossing Strings, (TIP) No. 9a)–f) from position I–V and back to Position I	144	12 minutes
10.	SCALES, from "Scale Practicing Models in the Circle of Fifths," No. 4: The Practice Model of the 12 Basic Arpeggios (Excluding the Thumb) (TIP), second pass from F♯ Major to D Minor, third pass through the complete circle of fifths, repeat each scale 4×	135	18–20 minutes

"A true, great talent can neither be mislead nor corrupted!"

JOHANN WOLFGANG GOETHE

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THE BIBLE OF CLASSICAL GUITAR TECHNIQUE

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4 018262 204254

AMA 610425E
ISBN 978-3-89922-191-6
ISMN M-50155-145-3

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